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• REPORT •

OF THE

TWENTY-EIGHTH

INDUSTRIAL EXPOSITION

OF THE

MECHANICS' INSTITUTE

OF THE

CITY OF SAN FRANCISCO

*Held at the Mechanics' Pavilion from the 13th Day of August
to the 14th Day of September, 1895, Inclusive*

MECHANICS' INSTITUTE

TWENTY-EIGHTH INDUSTRIAL EXPOSITION

1895.

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BOOKS AND DONATIONS, ...	LEGGETT, HOLMES, DENICKE
LECTURES AND CLASSES, ...	BUSH, LEWIS, FISHER
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PAVILION, ...	HOLMES, CUMMING, KENDRICK
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MUSIC AND DECORATION, ...	LEWIS, KENDRICK, FORMHALS
MANAGEMENT, ...	KENDRICK, AYERS, LEGGETT

The President is, ex-officio, a member of all committees.

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REPORT OF BOARD OF TRUSTEES
OF THE
Twenty-Eighth Industrial Exposition
OF THE
MECHANICS' INSTITUTE
1895

To the Members of the Mechanics' Institute:

The Board of Trustees of the Mechanics' Institute have the honor to herewith present to the members a report of the Twenty-eighth Industrial Exposition given by the Society, and the thirteenth held in the present Pavilion.

Owing to the recent great Exposition at Chicago and the Midwinter Fair in this City, followed by great depression in the manufacturing and commercial world, the preliminary work was taken up under adverse circumstances, and has required great effort and labor on our part to bring it to the final successful result as shown in the Financial Report.

After due consideration, several innovations on previous rules and regulations were introduced, which we believe will, in future, when more fully understood, prove of great advantage to exhibitors and the management. The most important was a method of making awards by the percentage system, Efficiency, Design, Workmanship and Display being the factors for Judges to consider, and the exhibitor obtaining, in the aggregate, the highest percentage was adjudged the successful competitor. The usual awards of Gold, Silver and Bronze Medals and Diplomas,

heretofore given for prizes in proportion to the merit of the exhibit, were changed to a CERTIFICATE OF SUPERIORITY issued to the one having the highest percentage over all competitors.

Unfortunately there has been a vexatious delay in the issuance of the awards, owing to the preparation of the certificates which, being of a new and original design, required more time than first anticipated.

There is no doubt that these Fairs of the Institute are a factor of good in the community and a great benefit to the Library by inducing new membership, keeping its name and advantages before the people, and more especially adding to its finances, and thus enabling us to more fully carry out the aim and purposes of the Constitution.

The patronage and good will extended by the public to the past Expositions make them seem to have become almost a necessity to our citizens as a place for instruction and recreation, and no doubt it will be wisdom, as long as we have the present facilities, to annually hold them in the future.

To the Press of the City, who so favorably and fully gave information to the public and reported from day to day the attractions and progress of the Exposition, our thanks are due and tendered, as also to the ex-Trustees, members of the Institute, and others who, by good-will and assistance, when required, have generously aided us in the labor whose result will be found in the following pages, wherein the several details are fully set forth.

REPORT

FROM THE

COMMITTEE ON TICKETS AND ADMISSIONS.

*To the President and Board of Managers
Of the Twenty-eighth Industrial Exposition —*

GENTLEMEN: We herewith present a report of the daily receipts at the ticket office, also a detailed account of the total number of tickets sold, class of tickets and total receipts from that source:

DAILY RECEIPTS AT THE TICKET OFFICE.

1895.		DOUBLE SEASON, \$5 00.	SINGLE SEASON, \$3 00.	CHILDREN'S SEASON, \$1 50.	ADULT ADMISSION; Day, 25c.	CHILDREN ADMIS- SION; Day, 15c.	ADULT ADMISSION; Night, 50c.	CHILDREN ADMIS- SION; Night, 25c.	AMOUNT.
August	13.....	162	27	12			238	12	\$1,031 00
"	14.....	130	10	20	152	7	198	19	852 80
"	15.....	82	12	12	147	11	201	7	604 65
"	16....	103		25	157	22	277	32	741 55
"	17....	122	21	16	590	220	875	63	1,330 75
"	19.....	62	6	9	283	38	350	30	600 45
"	20....	49	8	9	306	25	516	38	630 25
"	21....	30	6	4	411	52	545	32	564 55
"	22.....	24	2	4	388	56	586	57	544 65
"	23....	27		5	337	56	584	90	548 15
"	24.....	34	5		1,334	617	2,012	158	1,656 55
"	26.....	15	2	2	407	35	532	55	470 75
"	27.....	12	2	1	388	53	603	48	485 95
"	28.....	8	1	1	437	62	734	54	543 55
"	29.....	6		3	437	44	701	46	512 35
"	30.....	5	1		524	122	1,041	123	728 55
"	31.....	5	2	1	1,572	737	2,760	183	1,961 80
September	2....	3			468	79	548	86	439 35
"	3.....	1	1		431	47	665	40	465 30
"	4....			1	595	75	871	48	613 00
"	5....	1			669	81	837	54	616 40
"	6....				601	106	755	76	562 65
"	7.....				1,353	572	1,677	119	1,292 30
"	9.....	1			2,056	470	918	59	1,061 25
"	10.....				394	49	436	28	330 85
"	11....				445	37	305	18	273 80
"	12.....				376	33	568	15	391 70
"	13.....				828	91	1,189	97	839 40
"	14....				1,746	444	2,539	164	1,813 60
Total.....		882	107	125	17,832	4,241	24,060	1,851	\$22,507 90

ACCOUNT OF TICKETS SOLD.

(LIBRARY AND TICKET OFFICE.)

RECAPITULATION.

1,096 Double Season Tickets at \$5 00...		\$5,480 00
175 Single " " at 3 00.....		525 00
125 Children's " " at 1 50.....		187 50
1,986 Double " " Members at \$2 50.....		4,965 00
81 Single " " " at 1 50.....		121 50
24,060 Adult Single-Admission Tickets at 50.....		12,030 00
1,851 Children's " " " at 25.....		462 75
17,832 Adult " " " at 25.....		4,458 00
4,241 Children's " " " at 15.....		636 15
28 Admission Day " at 25.....		7 00
133 Wheelmen's Day " at 25.....		33 25
499 University Day " at 25.....		124 75
90 Adult Excursion Tickets, S.P.R.R.Co. at 40.....		36 00
1 Child's " " " at 20.....		20
182 Adult " " " at 25.....		45 50
7 Children's " " " at 12½.....		88
666 Adult " " S.F.&N.P.R.R. at 25.....		166 50
42 Children's " " " at 15.....		6 30

\$29,286 28

R. P. DOOLAN,
JOSEPH LEGGETT, } TICKET COMMITTEE
CHAS. E. MOOSER. }

5 00 D.S. each Kind - without stripes
Single Season
100 50. each Kind - without stripes
Children's

REPORT OF FINANCE COMMITTEE.

To the President and Board of Trustees of the Mechanics' Institute:

GENTLEMEN—We herewith present a report of the Financial matters pertaining to the Twenty-eighth Industrial Exposition.

EXPENDITURES.

ADVERTISING —

Abend Post	\$ 20 00
Auditing Bill Posting Co.....	5 85
Bulletin	166 25
Call (Morning).....	323 05
California Demokrat.....	20 00
California Journal.....	5 00
Cevasco, C. B.....	4 00
Chinese World.....	1 50
Chronicle, S. F.....	372 35
Daily Report.....	207 50
Examiner (Daily)...	425 95
Foster, J. F.....	50 00
Horn Hong.....	11 00
Journal of Commerce.....	50 00
L'Italia.....	15 00
Le Franco-Californien.....	4 00
Morning Times (Oakland)	40 00
Post (Evening).....	191 50
Pacific Coast Posting and Advertising Co.....	133 92
Public Opinion.....	5 00
Stockton Bill Posting Co.....	6 25
Tietjen, G. H.....	7 00
Tribune Publishing Co. (Oakland).....	40 00
Wright Bill Posting Co.....	1 80

\$2,106 92

AQUARIUM—

Beale, E., Expenses in Obtaining Fish...	\$ 34 50
Brown, Chas & Son, Fish Showers, and two 40 Gallon Cans.....	8 00
Brownlee, J. P., Reflectors, etc.....	19 65
Clabrough, Golcher & Co., Fishing Tackle.....	13 20
Denicke, Frederick, Expenses in Obtaining Fish.	31 15
Doran, Thomas F., Expenses in Obtaining Fish.	38 30
Edison Light and Power Co., Wiring, etc.....	22 35
Electrical Engineering Co., Rent of Electric Motor During Fair.....	20 00
Mooser, Chas. E., Telegram to San Mateo.....	65
Pasteur Germ Proof Filter Co. Use of Filter During Fair.....	100 00
Pay Roll, Workmen.....	36 00
Precht, Chas., Expenses in Obtaining Fish.....	28 20
San Francisco Art. Stone Paving Co., Gravel for Fish Tank.....	10 00
Secretary, Petty Expenses.....	42 70
Union Ice Co, Ice for Fish.....	10 30
Whitelaw, T. P. H. & Son, 3 4-Foot Square Iron Tanks.....	60 00
	\$475 00

ART DEPARTMENT—

Alexander, G. W., Step Ladders, Hardware, etc.	\$ 18 73
Hildebrant, H., Cartage on Pictures.....	4 00
Pay Roll, Workmen Hanging Pictures.....	148 65
Penn, John, Cartage on Pictures.....	81 50
Reynolds, F. B., Insurance on Pictures.....	170 50
Sanborn, Vail & Co., Repairing Frames.....	7 95
Secretary, Petty Expenses.....	2 25
Walter Solly, Salary as Superintendent.....	300 00
Walter, Solly, Petty Cash.....	15 05
Weil, Raphael & Co., Canton Flannel.....	10 03
Wicker, F. W., Insurance on Pictures.....	16 80
	\$775 46

BUILDING—

California Mills, Lyres for Music Stand.....	\$ 4 10
Central Lumber and Mill Co., Lumber.....	29 56
Delmas, J. K., Carpentering.....	6 00
Doerr, W. G., Painting and Whitening.....	76 00
Doran, Thos. F., Repairing Window Sashes, Rails, etc.....	42 00

Dunham, Carrigan & Hayden Co., Hardware....	\$ 21 33
Fuller, W. P. & Co., Lead, Oil, Brushes, etc....	17 35
Green, C. B., Carpentering and Material.....	355 88
Hagmar, C. F., Whitewashing, Painting, etc....	224 50
Hildebrant, H., Furnishing and Setting Glass..	78 30
Ils, John G., Repairing Range.....	10 00
Joost Bros., Hardware.....	28 73
Kenuck & Cooper, Carpentering.	4 00
Lewin, R., Blacksmithing.....	4 45
Pay Roll, Workmen.....	43 15
Secretary, Petty Expenses.....	25 25
Snell, E. L., Cement.....	3 00
Stevens, F. M., Sewer Pipe.....	7 28
Wainwright, Wm., Whitewashing Annex.....	70 00
Wood, E. K., Lumber Co., Lumber.....	143 41
	\$1,194 32

DECORATIONS—

Browne, Covering Counters.....	\$ 4 00
Doerrer, W. G., Painting and Whitening.....	166 50
Enginger, Victor, Wire Netting.....	81 03
Shaeffer, Fred, Decorating the Pavilion ..	283 25
Tidball, Chas. B., Decccrating the Pavilion. ...	200 00
	\$734 78

EXPENSE—

Bare Bros., Chairs.....	\$250 00
Browning, J., Moving Safe.....	5 00
Buchanan Bros, Brooms, Brushes. Mops, etc...	16 55
Chiosso, Vincenzo, Removing Rubbish.....	18 00
Columbia Theatre, Rent for Opening Exercises.	100 00
Eggers, Gould & Co., Supplies for Jurors	6 00
Eiben & Schaeffer, Table.....	1 25
Figone, L. & Co., Removing Rubbish	15 00
Fowler, Edwin, O., Preparing Percentages of Jurors' Reports ..	15 00
Gold Stock Telegraph Co., Delivering Addressed Letters.....	16 20
Goldberg, Bowen & Lebenbaum, Supplies for Jurors.....	12 00
Hall Safe and Lock Co., Changing Combination of Safe.....	2 50
Henko, A. V., Damage to Exhibit.....	7 50
Hilton, Wm., Expenses on Jacquard Looms.....	75 00
Indianapolis Furniture Co., Chairs.....	21 00
Italian Swiss Colony, Wines for Jurors.....	5 35

Jackson, J. A., Petty Expenses.....	\$ 5 55
Klein, J. M., Repairing Electrical Apparatus....	26 45
Neville & Co., Two American Ensigns.....	66 00
Pacific Telephone Co., Rent and Service.....	68 00
Payot, Upham & Co., Paper and Fixtures ..	13 57
Pay Roll, Workmen.....	547 37
Plum, Charles M. & Co., Linoleum and Shades.	27 60
Porcher, J., Hats for Watchmen	11 25
Progressive Window Cleaning Co., Cleaning Windows	45 00
Secretary, Petty Expenses.....	158 99
Smyth, W. H., Carfare and Other Expenses for Sailors	22 75
Washburn, Mrs. S. A., Commission on Sale of Tickets.....	5 50
Wilcox, E. B., Commission on Sale of Tickets...	4 80
	\$1,569 18

LIGHTING—

Boesch Lamp Co., Reflectors.....	\$ 61 00
Crane Co., Gas Pipe, Fittings, etc.....	131 82
Doerr, W. G., Repairing and Painting Reflec- tors in Art Gallery.....	216 00
Edison Light and Power Co., Electric Light....	417 62
Greenbaum & Co., Light for Music Stand.....	3 50
Iburg, Wm., Electric Lights for Music Stand....	6 00
McGrath, Thomas, Petty Expenses	1 30
Pacific Gas Improvement Co., Gas.....	1,482 88
Pay Roll, Gasfitters.....	195 00
	\$2,515 12

MACHINERY—

Brady, W. J., Repairing Boilers, etc.....	\$ 48 80
Cronan, Wm., Exhaust Pipe.....	15 83
Fulton Engineering Works, Bolts, Nuts, etc....	8 85
Fuller, W. P. & Co., Faints, Oils, etc.....	67 45
Garrett, W. T. & Co., Fittings for Boilers.....	34 90
Goodyear Rubber Co., Plumbago.....	7 35
Gregory, H. P. & Co., Blower	20 00
Holbrook, Merrill & Stetson, Wrench, etc	2 10
Marwedel, C. F., Wrenches.....	3 50
Oregon Improvement Co., 60 520-5280 tons Welsh Anthracite Coal, at \$6 75 per ton	406 55
Pay Roll, Labor, etc.....	48 00
Royer, H., Belting, etc.	33 95
Secretary, Petty Expenses.....	5 00
Tamm & Nolan Co., Oils and Varnish.....	5 45

Vulcan Iron Works, Shafting, etc.....	\$345 80	
Wickson, G. G., Cartage on Engine.....	3 00	
Wickson, G. G., Engineer's Service in Charge of Auxiliary Engine.....	45 00	
		\$1,101 53

MECHANICS' INSTITUTE—

Amount Turned Into the Treasury as Profit of the Exposition.....		10,184 01
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MUSIC—

Bates, W. E. and Wife, Cornetists.....	\$ 80 00	
Chinese Imperial Band, Music one Evening.....	24 00	
Gerrish, Lillian, Whistler	5 00	
Scheel, Fritz, Music Four Weeks as per Contract.....	4,975 67	
		\$5,084 67

PREMIUMS—

Cash Awards—Art Exhibits.....	\$870 00	
“ “ Display of Hops.....	15 00	
Dickman-Jones Co., New Certificates	200 00	
Fleishhacker & Co., Paper Rolls	4 50	
Gold, Stock and Telegraph Co., Delivering Cer- tificates	4 80	
Thors, S., Engrossing Certificates.....	22 50	
		\$1,116 80

PRINTING—

Barry, James H., Art Catalogues, Circulars, Cards, etc.....	\$161 75	
Crocker, H. S. Co., Cards and Envelopes.....	121 00	
Eastman, Frank, Programmes.....	8 00	
Francis & Valentine, Cards.....	71 00	
Galloway Lithographing Co., Letterheads and Check Books.....	32 00	
Hicks-Judd Co., Programmes.....	102 00	
Hill, Edward W., Mimeograph and Percentage Cards.....	23 50	
Hinton Printing Co., Rules, Regulations, Pre- mium List and Report.....	251 00	
Hopps & Sons, Lettering Signs.....	15 00	
Kuttner Bros., Dodgers, Tags, Tickets, etc.....	160 75	
Pariser, Jas. A., Circulars, Diagram Cards, etc..	33 00	
Thomas, P. J., Receipt Books, etc.....	32 50	
Union Photo Engraving Co., Plan of Floors.....	5 00	
		\$1,017 90

SALARIES—

Wages of Superintendent, Clerks, Engineer, Agent, Officers, Watchmen, Laborers, etc...	\$5,472 15
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STATIONERY—

Crocker, H. S., Scrap Book, Typewriting Sup- plies, etc.....	\$ 8 65	
Johnson & Emigh, Envelopes.....	2 35	
Klinkner & Co., Stamps.....	1 93	
Payot, Upham & Co., Pass Book.....	35	
Post Office, Stamps and Postal Cards.....	29 50	
Secretary, Petty Expenses.....	30 05	
Tauzy, J. & Co., Envelopes.....	11 40	
Western Mailing Bureau, Addressing Circulars..	6 05	
		\$90 28

SUNDRY ITEMS—

Money Refunded for Tickets Purchased.....	\$ 1 00	
Contingent Fund, Advanced for Sundry Ex- penses	100 00	
		\$101 00

WATER—

Spring Valley Water Co., Water Used During Fair.....	\$260 60	
		\$33,779 72

RECAPITULATION OF REVENUE AND EXPENSES.

REVENUE—

Sale of Tickets.....	\$29,286 28
Sale of Privileges.....	4 212 08
Sale of Catalogues.....	53 40
Gas and Electric Light to Exhibitors.....	106 00
Sundry Overpayments.....	19 68
Sale of Wire Netting.....	22 28
Contingent Fund returned	100 00
	\$33,799 72

EXPENDITURES—

Advertising.....	\$ 2,106 92
Aquarium	475 00
Art Department.....	775 46
Building.....	1,194 32
Decorations	734 78
Expense.....	1,569 18
Lighting	2,515 12
Machinery.....	1,101 53
Mechanics' Institute.....	10,184 01
Music	5,084 67
Premiums.....	1,116 80
Printing	1,017 90
Salaries.....	5,472 15
Stationery	90 28
Water.....	210 60
Sundry Items.....	101 00
	\$33,799 72

Respectfully submitted,

GROVE P. AYERS,
 ERNST A. DENICKE,
 HENRY ROOT,

Committee.

PRELIMINARY ANNOUNCEMENT

OF THE

Twenty-Eighth Industrial Exposition

OF THE

MECHANICS' INSTITUTE.

The Board of Trustees of the Mechanics' Institute announce that the Twenty-Eighth Industrial Exposition of the Association will open to the public in its spacious Exhibition Building on Larkin street on the 13th day of August, 1895, and will be continuously open until the 14th day of September, a period of five weeks.

The Pavilion is too well known to need an extended description, and it is only necessary to say that the floor space of the building contains an area of 168,700 square feet, nearly four acres in extent; has ample room for the needs of all exhibitors, and is complete in all necessary appointments.

The importance and advantages of these Expositions for the display of articles of established merit, or the introduction of new ones, is a fact now fully admitted, and many of our successful manufacturers trace the turn of the tide in their favor directly to the recognition obtained at these exhibitions.

The fact should be kept in view that these Expositions are an exponent of Mechanical Art, Invention, and whatever else that will be for the advancement of the workmen and the permanent prosperity of our citizens and our State.

It is the desire of the management to have the display of Manufactured and Natural Products as full and perfect as possible, that the varied resources of this Coast may be brought together in such form as will best afford the citizen seeking information, the capitalist seeking investment, the visitor from the Eastern States and immigrant from abroad seeking a business opening or a home, an opportunity to inform themselves of the skill and advancement of our citizens and inventors, and the variety, excellence and superiority of our products.

To that end the managers hope to have a general and complete display of Manufacturing Machinery in operation, Raw and Manufactured Products and all articles used in the Arts and Sciences, and necessary for the wants of man, and solicit the co-operation of the public in securing the object of the Exhibition as above set forth.

A carefully prepared Premium List, with the Rules and Regulations, will be ready for distribution in a few days.

Any desired information will be promptly sent or given on application to the Secretary, 31 Post street, San Francisco, Cal.

ANNOUNCEMENT FOR ART DEPARTMENT.

The Board of Trustees of the Mechanics' Institute intend to make the Art Department of the Twenty-Eighth Industrial Exhibition an elaborate and highly ornamental, as well as interesting, feature of it.

This Department will be divided into three large and comprehensive divisions, viz.: the Loan Exhibit, the Tuition of Art, and the Art Reproduction.

This Exhibition will contain a splendid array of the best works of Art contained in our galleries. The works of masters, adequately classified and catalogued, will be hung in a way to insure the best mode for their appreciation. Besides the owners' and the artists' names, the catalogue will contain a short description of the subject, facilitating the understanding of the artist's design.

All possessors of Art treasures are respectfully asked to co-operate with the institution in making the Art Department a success.

The owner of a picture or statue will be guaranteed the insurance of the loan against eventualities, etc.

The Art Institutes, Schools of Art, Clubs and Teachers will find an opportunity to exhibit their work and the work of their pupils.

The hanging of these exhibits will be directed by the Superintendent of the Art Department, assisted by a Hanging Jury chosen from amongst our local artists.

To facilitate an easy and effectual way for students in quest of tuition to choose amongst the local teachers, the catalogue will contain the address of the artists' studios.

In view of the enormous development which *Illustrating* has attained within the last few years, we have devoted a special sub-department for this line of Art work. Joined to it will be an exhibition of the Reproducing Processes, forming thus a

general, comprehensive display of both the artistic and mechanical means of illustrating.

Wood-cut, Half-tone work, Pen and Ink Reproductions and Lithography will be added to this department, making as complete as possible this most remarkable feature of our present Art life.

A large amount of space will also be allotted to a thorough representation of all Photographic Work, including Professional, Club and Amateur Photography.

A detailed exhibition of the art-work of the *Press*, from the first rapid pencil sketch made by the detailed artist to the finished copy of the journal throughout all the phases of modern appliances, will be one of the most interesting parts of this department.

Mr. Solly Walter has been appointed Superintendent of the Art Department, and will give all desired information. He will be present every afternoon except Thursdays at the Mechanics' Institute, 31 Post street, or else can be communicated with at his studio, 26 O'Farrell street. To secure accurate cataloguing, proper space for exhibiting, etc., it will be necessary to communicate with Mr. Walter as soon as possible.

CIRCULAR TO EXHIBITORS.

The Board of Trustees of the Mechanics' Institute, appreciating the urgent necessity of concerted action looking toward the fostering and developing of Manufacturing and Mechanical Industries on the Pacific Coast, have decided to emphasize and give particular prominence to Home Industry at the forthcoming Twenty-eighth Industrial Exposition, which opens August 13, 1895.

After very careful consideration, the plan adopted as promising the greatest and most permanent results is the display of the Pacific Coast Manufactures and Industries in active operation in the Pavilion. This does not mean of course that all the processes of each industry are to be in active operation, but that, in addition to the display of the manufactured article, some characteristic process connected with the production of the finished article will be performed by skilled operatives.

This form of exhibit is not only instructive, but is the most attractive to visitors, and consequently of greatest benefit to exhibitors, and at the same time the collective effect of an Exposition of this character is to force strongly home the conviction that manufactures of great importance and variety are in operation on this Coast, and that it is not necessary to send East for any of our ordinary requirements of life.

That such an Exposition must be of great and lasting benefit to this Coast is beyond question, and at this time, when business is just on the turning point of revival, it will undoubtedly assist in directing the rising stream of industry into our home factories and shops.

Without the earnest and active co-operation of those engaged in these industries, the efforts of the Mechanics' Institute in this direction must avail little. The Board of Trustees there-

fore strongly urge upon all firms and individuals engaged in Mechanical and Industrial pursuits to second the effort of the Institute to carry into successful operation this enterprise.

No industry is so great that it can profitably ignore public recognition, and none so small that public attention will not be of benefit to it.

Representatives of all Industrial and Manual Trades and Handicrafts are invited to exhibit. None will be considered too small or insignificant to be accorded space for its display.

No charge of any kind is made for Exhibition and Power. Steam and Water are also furnished free.

RULES AND REGULATIONS
OF THE
Twenty-Eighth Industrial Exposition
OF THE
MECHANICS' INSTITUTE,
1895.

RULE I.

The Pav lion will be opened for the reception of goods on and after Thursday, August 1, 1895.

The Exhibition will open to the public on Tuesday, August 13th, and continue open from day to day (Sundays excepted) until Saturday, September 14th. Hours of admission will be from 10 A. M. to 5 P. M. and 7:30 to 10 P. M., except Saturdays, when the exhibition will close at 11 P. M.

RULE II.

Articles can be entered for exhibition or competition, as desired.

If entered for competition, the articles must be in position and receipted for, and the entry tag attached not later than Tuesday, August 13th, excepting exhibits of fresh fruits, flowers

or vegetables not in season at the time of opening, or additions to varieties already on exhibition.

Articles intended by the exhibitor for competition, but not entered and in position by the time specified, to wit: August 13th, shall not, under any circumstances, be allowed to compete, except as provided in foregoing paragraph.

RULE III.

The driving engine will be in operation three days previous to the opening, and exhibitors of machinery in motion will be required to have their exhibits in running order on the opening day.

RULE IV.

Machinery entered for competition and requiring power must be in position and in operation on or before August 13th.

Shafting, Belts, Gearing, High-Speed Machinery, and any other exhibits likely to prove dangerous, must be securely fenced and protected to the satisfaction of the Board of Trustees; but such approval shall not relieve the exhibitor from his own liability.

RULE V.

No charge of any kind will be made to exhibitors for space. Steam and water will also be furnished free, in reasonable quantities; but all platforms, counters, ornamental partitions, show-cases and fixtures must be erected at the expense of the exhibitors. Exhibitors and holders of privileges will be required to pay for all gas consumed by them for cooking or heating purposes, and also for all extra light more than that furnished for the general lighting of the building.

RULE VI.

Applications for space can be made at any time up to August 1st, and should be made as early as possible.

Blank forms of application for space will be furnished by the Secretary or General Agent.

Space will be awarded as early as practicable after the application has been received.

Space allotted to applicants and not taken possession of by the arrival of their goods on or before Saturday, August 10th, may be assigned to other exhibitors.

The Board of Trustees reserve the right at any time to exclude from the Exhibition all nostrums, articles of an explosive, inflammable, dangerous or offensive character, and everything they may deem objectionable.

Any exhibit of goods, which in the opinion of the Board of Trustees is of an improper or objectionable character may, at the option of the Trustees be removed at any time.

The Board of Trustees reserve the right to refuse admission to any exhibitor or employe whom they may consider to be an improper person, and also to remove the goods of such exhibitor from the building.

RULE VII.

Exhibitors will receive from the entry clerk, on the arrival of their goods, a receipt for the same, which must be presented for their delivery at the close of the Exhibition. The receipts shall designate whether the articles entered are for exhibition or competition.

RULE VIII.

The Board of Trustees will endeavor to select competent Examining Judges.

Articles entered for exhibition only shall be designated by a tag attached, and be so reported by the jurors and appear in the report of the Exhibition.

Judges must refuse a certificate of superiority to articles which do not reach a high standard of excellence.

Judges will refuse to recommend an exhibit which falls below a reasonable standard of merit.

As soon as the judges have reached a decision they shall file with the Secretary a report, giving the name of the exhibitors, the articles examined and the number of the class in which it is entered.

No award for second degree of merit will be made.

In cases where it is not practicable for jurors to test or examine machines in the building, or where models only are exhibited, they may go outside the building to make such examination or test; but the jurors must first procure from the Board of Trustees a written consent, which must be attached to their award when filed with the Secretary, and the competitors must take upon themselves, in exoneration of the Institute or Board of Trustees, all claims in respect of damage resulting from the testings, and must renounce all claims for compensation for any injuries that they may incur from imperfections in the arrangements or in the testing.

Judges in each class will hold a meeting before making their final report, at which time exhibitors in the class may be invited to attend and explain the merits of their respective exhibits, under such rules as may be prescribed by the Committee on Management.

Should any juror, for any reason, at any time become incapacitated from serving, the Board shall select another juror.

All recommendations of Judges must be submitted to the Board of Trustees on or before September 7th, and receive their approval before being final.

The Board of Trustees reserve to themselves the right to amend, rescind or reject the report of the Judges in any given case.

RULE IX.

The announcement of awards will be made by the Board of Trustees on Monday, September 9th.

RULE X.

Power will be furnished for driving machinery from the main lines of shafting, which are 2 15-16 inches in diameter, and will make about 110 revolutions per minute. Driving pulleys, 30 inches in diameter, are now on the shafting for use of exhibitors. Pulleys for the main line, if furnished by exhibitors, must be accurately balanced, and have the owner's name

plainly marked thereon, and should be received and placed in position by Saturday, August 10th.

RULE XI.

No article on exhibition or within the building can be removed until the close of the Fair, unless by permission of the Board of Trustees or Superintendent, in writing; but reasonable facilities for making sales of articles, for delivery at the close of the Exhibition will be afforded.

Exhibitors' cards, circulars and samples can only be placed within their own space for distribution.

No lottery or gift enterprise of any kind will be allowed, nor shall visitors be solicited for names or signatures when the purpose is to award a consideration by chance.

Holders of privileges shall have the exclusive right to sell the article they purchase the privilege for; but in no case shall it be construed that their purchased right debar any exhibitor from giving away in quantities, to be determined by the Management, samples of articles they may manufacture in the Pavilion or place on exhibition.

Exhibitors will be required to keep their space and exhibits clean and in good order, and in cases where they are covered at night, to remove such covering by 11 o'clock A. M., and not to cover the same until ten minutes before the closing hour.

RULE XII.

The most careful means will be taken, through the agency of the police and otherwise, to guard and protect the property on exhibition, and it will be the purpose of the Management to return all articles to the owners without loss or injury; but as the Fair is for the benefit of the general public, and particularly for the business benefit of the exhibitors and to add to the reputation of their wares; the Mechanics' Institute or the Management will, under no circumstances, be responsible for any loss or injury to articles placed on exhibition, which must be invariably at *owner's risk*.

RULE XIII.

In order to preserve the general harmony of the Exhibition, and make the display of goods attractive, the Board of Trustees reserve the right to direct the general arrangement of the articles on exhibition, and to regulate the character of all signs and advertisements.

RULE XVI.

The Board of Trustees do not consider the Exhibit List herewith appended as complete, nor are articles entitled to premiums limited to those hereafter enumerated; but any meritorious article on exhibition, although not herein mentioned, will receive due consideration from the judges.

RULE XVII.

The Board of Trustees shall have the right at any time to modify or change these rules, or any of them, or make such others as necessity and propriety may demand, or that in their judgment will be for the best interests of the Institute.

RULE XVIII.

If any goods are left at the Exposition Building for a longer period than thirty days after the the close of the Exposition, such goods will be stored in a public warehouse at owner's risk and expense.

CLASSIFICATION OF EXHIBITS.

- CLASS 1—
Engines, Boilers and Appliances.
- CLASS 2—
Hydraulic Machinery and Steam Pumps.
- CLASS 3—
Machinist's Tools and Metal-working Machinery.
- CLASS 4—
Wood-working Machinery,
- CLASS 5—
Miscellaneous Machinery.
- CLASS 6—
Mining Machinery and Appliances.
- CLASS 7—
Laundry Machinery.
- CLASS 8—
Fire Apparatus and Appliances.
- CLASS 9—
Marine.
- CLASS 10—
Sewing Machines, Knitting Machines, Braiding Machines and Looms.
- CLASS 11—
Agricultural Machinery.
- CLASS 12—
Iron, Steel and Lead.
- CLASS 13—
Cooking, Heating and Ventilating.
- CLASS 14—
Hardware, Cutlery, Firearms, etc.
- CLASS 15—
Fire and Burglar-proof Safes and Locks.
- CLASS 16—
Brass Works, Gas and Lamp Fixtures, Plumbers' Goods, etc.

CLASS 17—

Grates and Mantels—Marbles, Artificial Stone Earthenware, Glassware, etc.

CLASS 18—

Carpenters', Joiners', Carvers' and Stair Builders' Work, Ornamental Glass Paintings, etc.,

CLASS 19—

Musical Instruments.

CLASS 20—

Vehicles and their Attachments, Children's Carriages, Hobby-Horses, etc.

CLASS 21—

Furniture, Upholstery, etc.

CLASS 22—

Billiard Tables.

CLASS 23—

Wooden Ware, Brushes, Wire, Willow Ware, etc.

CLASS 24—

Boots, Shoes, Leather, Rubber Goods, etc.

CLASS 25—

Hemp, Cordage, Paper, Furs, Silk, Hair, etc.

CLASS 26—

Woolen Dress Goods, etc.

CLASS 27—

Gentlemen's Furnishing Goods, etc.

CLASS 28—

Ladies' Furnishing Goods, Dresses, Cloaks, Millinery, etc.

CLASS 29—

Electricity and Electrical Appliances, etc., etc.

CLASS 30—

Scientific Apparatus, etc.

CLASS 31—

Surgical and Dental Implements and Appliances.

CLASS 32—

Gold, Silver and Plated Ware, Watches, Clocks, Jewelry and Bronzes.

CLASS 33—

Printing.

CLASS 34—

Hairwork, Needlework, Embroidery, Shellwork, Patterns, etc.

CLASS 35—

Painting in Oil and Water Colors.

CLASS 36—

Ceramic Art.

CLASS 37—

Sculpture, Statuary and Carving.

CLASS 38—

Engravings, Penmanship, etc.

CLASS 39—

Photography

CLASS 40—

Chemical and Pharmaceutical Products.

CLASS 41—

Groceries, Meals, Flour, etc.

CLASS 42—

Wines and Brandies of California Production, from California Vineyards.

CLASS 43—

Fermented Products.

CLASS 44—

Tobacco.

CLASS 45—

Geology, Mineralogy, Zoology, Botany, etc.

CLASS 46—

Farm Products.

OPENING EXERCISES.

The Committee on Opening Exercises, consisting of Trustees Doolan, Leggett and Holmes, prepared for and arranged the following programme, which was successfully rendered at the Columbia Theatre on Tuesday afternoon, August 13th, before a large and appreciative audience:

PROGRAMME OF EXERCISES.

1. March of Progress.....SCHLEICHER
DEDICATED TO MECHANICS' INSTITUTE.
 2. Address.....PRESIDENT A. S. HALLIDIE
 3. Comic Song.....FERRIS HARTMAN
 4. Recitation... ..CARROLL SMITH
 5. Oration.....HON. JAMES G. MAGUIRE
 6. Suite from the Incidental Music to "*Peer Gynt*".....GRIEG
 1. Morning (Allegretto Pastorale)
 2. The Death of Ase (Andante Deloroso)
 3. Anitra's Dance (Tempo di Mazurka)
 4. Dance of Imps in the Halls of the Mountain King.
 7. Recitation—"Oh, Sir".....MISS FREDa GALLICK
Knickerbocker Male Quartet—"Rosebud Fair".....MACY
D. M. LAWRENCE, R. P. EVANS, D. P. CRANE, L. A. LARSEN.
 9. Heinzelmännchen with Bell Solo.....FRITZ
MISS R. SAGER AND L. BECKER'S LYRA ZITHER CLUB.
 10. Overture—"Festival".....BRAHMS
Music by Fritz Scheel's Orchestra.
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ADDRESS OF A. S. HALLIDIE, PRESIDENT OF THE MECHANICS' INSTITUTE.

LADIES AND GENTLEMEN: The Mechanics' Institute welcomes you to the inauguration exercises of its Twenty-eighth Industrial Exposition. From your presence here we predict a successful season—full of interest to those connected with the commercial and industrial enterprises of the State which have so recently received a fresh impetus from the awakening sentiment of support to home industry and to State enterprise.

With the most flattering assurances of good fellowship and feeling, we

again set out on our annual journey of progress, so well exemplified in the exhibition we are called together to-day to inaugurate.

How much of patient toil, of exhausted energy, of deep thought and careful investigation is gathered under the roof of the Exhibition Building of the Mechanics' Institute on this occasion, the imagination only can paint.

Consistently and persistently the Mechanics' Institute has, ever since its foundation, been the advance guard of industrial progress, the exponent of industrial development, and during the many years of its existence it has maintained, without assistance from any outside source, its library, reading room, classes and lectures, these exhibitions of which this is the twenty-eighth—a constantly increasing membership, and above all, the respect and good will of the people.

Its affairs have been managed with honesty and judgment, as the condition of the Association to-day will testify, and unselfishly, for there can never be any individual interest acquired in the property of the Institute by any member at any time, as the Charter expressly says:

“No share of stock nor any individual right in the property of this Association shall exist or be acquired during the existence of the Association, but the property belonging to and in the name of the Mechanics' Institute shall be held in trust by the Trustees for this Association, and never be diverted from the purposes and intention for which it was organized.”

In bringing together the results of man's industry and intelligence, under the broad roof of the Mechanics' Pavilion, this society is practically carrying into effect the injunction of its Constitution, which requires “Devotion to progress in the economic industries,” and it is a practical illustration, through the Exhibition now being opened, of the force and truth of the ideas at this time being advocated by the associations of citizens that have organized to develop the manufacturing and producing interests of this State, to better the city government, and to give a legitimate and healthy impetus to needed improvements in this city. In all these movements the Mechanics' Institute is heartily in sympathy.

The present Industrial Exhibition, the citizens of California can take pride in, because, imperfect as it may be, it is based upon the idea of developing the manufacturing capacity of the State by an exposition of the product of the mechanical industries and of demonstrating the originality and genius of her artists.

The Trustees have rigorously excluded the army of foreign agencies, except where a novel and attractive exhibit of educational value has been offered.

The purpose of this Exhibition has been principally educational. In its preparation, the management has endeavored to provide room for a representation of all the local industries, but many have been unable to obtain space from the late hour of their application.

As there has been an interruption in the regular Industrial Expositions

of the Mechanics' Institute since the fall of 1891, a reorganization of the administration became necessary, and many new features have been ingrafted which will be improved in the future, the intention being to hold these Expositions annually hereafter. During this interregnum this State and city has gone through a period of remarkable depression and lethargy. This depression and this lethargy is passing away. The people of the city and State are awaking to the fact that as individual success depends on the personal efforts of the individual, so the success of a community depends on the efforts of a community, and that those efforts must be devoted to developing the resources God has given to man and nature to the soil.

A new impetus has been developed, an inspiration from a brightening sky has lightened the soul and filled the mind with hope and confidence, and has remanded the oppression of darkness and disaster to the shadowy realms of the past, and individual interest is now being sacrificed to the general good.

Organizations of citizens, such as the Manufacturers' Association, Good Government Club, Half Million Club, Civic Federation, Merchants' Club and others, are all working for the general good, of which the honest administration of government is the foundation.

In this address, which is made the duty of the President of the Mechanics' Institute to present, there can be stated some facts which will occupy about fifteen minutes. The wisdom and oratory of this occasion has been assigned to my distinguished friend and your Member of Congress, Hon. James G. McGuire, who will elicit from your attentive ear as much pleasure as this address will demand patience.

San Francisco, during the interval between the census of 1880 and 1890, has fairly well held its industrial rank among the ten or twelve leading cities of this country.

It has advanced in rank one point, from ninth to eighth in population, and has lost one point, from the eighth to the ninth in number of shops and factories. On the other hand it has increased the amount of money invested, and stands ninth in the list in 1890, against tenth in 1880, and there has been no change in its rank in that decade in the number of hands employed, the amount paid out for wages and the value of the goods produced, which have been respectively, eleventh, tenth and ninth. The value of the raw material has been higher, as in this particular the city has advanced from the ninth to the eighth in rank. I have prepared a statistical table which is too dry to read here, but is made an appendix in this address. [See last page of this book.] It is, however, interesting to note that during that 10 years, the cities of Chicago, Brooklyn and St. Louis have made a distinguished advance, passing other cities and following closely the lead of New York and Philadelphia.

While these figures are interesting, they are ancient history and scarcely apply to the year 1895. The Census Bureau is an exceedingly cumbersome and expensive institution and needs a thorough remodelling and modern-

izing, and since its reports are five years behind time we have to look elsewhere for information and the most conservative observer does not place the present rank of San Francisco in the industrial cities, as high as stated by the Census report. Very many large and small manufacturing concerns have gone out of existence, public sentiment favoring home industry had almost died out and a very large number of mechanics have, during the past three years, left the city, looking elsewhere for work. Mills and shops are idle which formerly were active in face of the fact that local consumption of manufactured goods is greater than before.

This condition of affairs became so pronounced that a convention of manufacturers was held in this city last March, the proceedings of which you are familiar with. It resulted in organizing a Manufacturers' and Producers' Association. The efforts of this Association have aroused the latent sentiment of progress and development, and it is succeeding in making the people recognize the fact that there will be no progress or development in this city or state unless we create and maintain local industries, giving to goods produced or made in California, the unhesitating, untrammelled and earnest support of all Californians and all who have any interest in the future welfare and prosperity of this State. The present condition of affairs should end. Remunerative work should be found for the women and the men who are able and willing to work, and such a terrible tragedy as the suicide of a family caused by want, as in the case of the Edwards family on the 29th of last month, should have no possible existence in this city, and if the individual cannot alleviate this, it is the duty of the community as a municipality.

But by encouraging the making of all the articles that enter into home consumption, you create new opportunities for the employment of labor, which in turn creates others until idleness has no excuse for existence.

One of the sins that beset the average young man or woman is a contempt for manual labor. A contempt for that inevitable manual work which comes on them in spite of the contempt and with impartial severity, if they have had the misfortune to lack that training which fits them to grapple with the problem of earning a living.

To live by hard labor is the penance of a life for the privilege of living. To live by labor intelligently directed towards economic results is a satisfaction and pleasure. To what extent these modern schools of economic industry will enable this to be done, time alone can tell, but the tendency, I think, is to simplify instruction and to eliminate the higher branches which are restricted in their practical application in after life, and to make such schools useful to the family of the mechanic and artisan.

We have two schools in operation, the "Cogswell" and the "Lick." One more will soon be established, the "Wilmerding," and the fourth is provided for under the will of Mrs. Lux, and will in course of time be established, and in founding these schools private beneficence has devoted about \$2,000,000 to the working men and women in and near this city. With

such opportunities in this State for instruction in mechanical trades and arts, it is essential that we should, by the development of local industries, find employment in our own communities for the graduates from these schools—graduates who will not feel ashamed of their honest labor and hardened hands, and who, by their educated skill and trained intelligence, will form an impregnable battalion in the army of patriotic citizens, ever on guard to protect the National name and fame.

Again, the Mechanics' Institute bids you welcome. Your presence here and at the 28th Industrial Fair, encourages the Trustees in their work, which, in the future, as in the past, shall be devoted to the best interests of the people of this City and State.

The next number on the program was a comic song by the well known and popular comedian, Ferris Hartman, who in his inimitable style gave the ballad of "Silas Bought a County Right," which was followed by a recitation from Carroll Smith, and then Hon. James G. Maguire, member of Congress for California, delivered the oration:

ADDRESS OF HON. JAMES G. MAGUIRE.

LADIES AND GENTLEMEN: I congratulate the Mechanics' Institute of San Francisco upon this auspicious opening of its Twenty-eighth Annual Industrial Exposition. I also congratulate the representatives of the mechanic arts upon the glorious achievements which they have made during the half century, which we may call ours. During the last fifty years the march of material progress has been along the lines of mechanical improvement, and it has indeed been marvelous. During that period it is estimated by those best qualified to judge that the wealth producing power of labor has, on the average, in all departments of industry, been multiplied elevenfold. The skill of man in the arts of wealth production has improved so rapidly that the means of subsistence have outrun the demands of population. Science applied to wealth production has dissolved the nightmare of civilization—the Malthusian theory that population tends to increase faster than the means of subsistence. In this wonderful age of discovery and invention, the problem of production for the satisfaction of human wants seems to have been solved so far as the interests of this and many succeeding generations are concerned.

The problem of distribution is the one that now concerns civilized society. The means of securing to all men fair and equal opportunities for wealth production and to each producer the true result of his productive effort is the real problem of the immediate future. It would be quite inappropriate for me to deal with that problem to-day, although it results directly and approximately from the triumphs which we are here to celebrate.

With the march of material progress there comes through the intro-

duction of labor saving machinery and improved processes an enormous displacement of labor. How to redistribute that displaced labor immediately to opportunities for productive employment is a resulting problem with which it is the duty of society immediately to deal. The failure of society thus far to solve that problem is the cause of the conflict between labor and capital. It is the cause of the widespread hostility to labor-saving inventions and to material progress. It is capable of solution; indeed it is in process of solution. The solution of that problem is necessarily the next great step in the order of social evolution. To those who see it coming the material progress of the world has no dark side. To them it is perfectly clear that the evils now accompanying such progress are but the incidents of a transition to better conditions, in which all will be benefited and blessed by every increase in the wealth producing power of labor, by every triumph of genius, in reducing the percentage of human labor in the productive energies of the world.

Let us, then, for to-day, free our minds from the fear that existing evils must continue or must increase as material progress increases, and calmly survey the triumphs of genius in solving the problem of wealth production—in making subsistence outrun population—in reversing the dark prophecy of Malthus, and in opening to the world the assurance of increasing plenty and increasing happiness, even as population multiplies.

I do not mean to weary you with statistics, because I know that you have not come here to be bored with long lines of figures, yet to me the statements which I shall give, drawn entirely from authentic sources and most of them published, with approval, by Hon. Carroll D. Wright, National Commissioner of Labor Statistics, have been of the deepest interest, and I hope that you will find in them the same pleasant surprises that I have found. I therefore crave your indulgence for a few moments while I briefly state some of the most striking advances that have been made during the last fifty years in the arts of wealth production.

Mr. Carroll D. Wright, speaking of the displacement of muscular labor by machinery invented during the present half century, in his report for the year 1886, says:

“The mechanical industries of the United States are carried on by steam and water power representing, in round numbers, 3,500,000 horse power, each horse power equaling the muscular labor of six men; that is to say, if men were employed to furnish the power to carry on the industries in this country, it would require 21,000,000 men, representing a population, according to the ratio of the Census of 1880, of 105,000,000. The industries are now carried on by 4,000,000 persons, in round numbers, representing a population of 20,000,000 only. There are in the United States 28,600 locomotives. To do the work of these locomotives upon the existing common roads of the country and the equivalent of that which has been done upon the railroads the past year would require, in round numbers, 54,000,000 horses and 13,500,000 men. The work is now done, so far as men are

concerned, by 250,000, representing a population of 1,250,000, while the population required for the number of men necessary to do the work with horses would be 67,500,000. To do the work now accomplished by power and power machinery in our mechanical industries and upon our railroads with hand processes and horse power would require men representing a population of 227,500,000."

In illustration and proof of these striking general statements, we are informed by the same author, that in the following occupations the following displacements of labor, and corresponding increase in the wealth producing power of labor, have occurred:

In the manufacture of small fire arms, three men by a division of labor and the use of power machinery can turn out and fit from one hundred and twenty-five to one hundred and fifty gun stocks in one day of ten hours, while under the old system, one man working ten hours could turn out only one stock. In the manufacture of boots and shoes, one hundred persons, with the aid of machinery, could do the work of five hundred by hand processes. With the aid of the Goodyear sewing machine for turned shoes, one man can now do the work of eight men. By the use of King's heel-shaver or trimmer, one man can do the work of three. With the McKay machine, one man can handle three hundred pairs of shoes per day, while without the machine he could handle but five pairs. In nailing on heels by the use of machinery, one man can now do the work of five men. In finishing the bottoms of shoes, one man with a sand-papering machine can do the work of four men. He cites the case of a large Philadelphia shoe manufacturing firm, which by the introduction of new machinery, within thirty years, has enabled one man, on the average, to do the work of six. In the broom manufacturing industry, nine men with the use of machinery can turn out twelve hundred dozen brooms in a week, whereas seven years before, it required seventeen skilled men to turn out five hundred dozen brooms in the same time. In the building of carriages and wagons, fifty years ago it would take one man thirty-five days to build a carriage by hand which can be built now by one man in twelve days. In the manufacture of carpets, one man with the aid of machinery can now do the work of from ten to twenty men working under the processes in vogue in 1850. "In spinning alone, it would take by the old methods, from seventy-five to one hundred times the number of operatives now employed to turn out the same amount of work, while in weaving, there would be required at least ten times the present number. A carpet measuring machine has been invented which brushes and measures the product at the same time. By the use of this device one operator will accomplish what formerly required fifteen men."

In the manufacture of certain kinds of clothing, one cutter with the aid of machinery can do the work formerly done by six men. In the manufacture of hats of medium grade, one man does the work of three, and the work is said to be far superior to that produced formerly by hand. In the manufacture of soft and stiff hats, there seems to have been a greater in-

crease of productive power, one man being able to do the work formerly done by nine men. In the manufacture of cotton goods, there has been an enormous increase of productive power. With hand-loom, each of which required an operator, a weaver used to weave from sixty to eighty picks per minute of cloth of good quality containing twenty threads of twist to each quarter square inch. Now one weaver is able to attend from two to ten looms, according to the grade of goods, and each loom weaves one hundred and eighty picks per minute of the same kind of cloth. In spinning cotton with the single spindle hand wheel, one spinner working thirty-six hours could spin five hanks of number 32 twist. Now with one pair of self acting mules, having 2124 spindles, one spinner with the assistance of two boys, will produce 55,098 hanks of number 32 twist in the same time, and the machines can be run at a much higher speed. "In the olden time in this country," says Mr. Wright, "a fair adult hand-loom weaver wove from forty-two to forty-eight yards of common shirting per week. A weaver attending six power looms in a cotton factory of to-day would produce 1500 yards a week."

In the manufacture of flour, one man can now, with the aid of machinery, do the work formerly done by four. In the manufacture of furniture, one man can do the work of two. In the manufacture of glass jars and bottles, one man, with the aid of machinery, can do the work formerly done by six. In the manufacture of patent leather, one man can do the work of two. One cooper, with a Bucker machine, can do the work formerly done by from four to five men.

One boy running a planing machine in turning wood work for musical instruments and material, does the work of twenty-five men. In the manufacture of sounding boards, fifteen men can turn out 5,000 boards per month, or 278 per day, where a good man formerly could make but four in a day by the old method. In the production and working of metals, the increase of wealth producing power by the introduction of labor saving machinery has been enormous.

By the use of improvements and inventions between 1870 and 1886, in the hammers used in manufacturing steel, one man is enabled to do the work of nearly ten men. During the present half century, Bessemer's great process of manufacturing steel has been introduced, saving more than half the labor formerly involved in making steel. In making tin cans, one man with the aid of machinery can do the work of from two to four men, while in making lard pails, one man with the aid of a boy can do the work formerly done by ten skilled men. In the making of certain kinds of tinware, one man is enabled to do the work of five. In the manufacture of bread boxes, what was done in 1876 by thirteen men and women, working together, is now done by three men. In the mining of coal, one man by hand processes could get out fifty-two tons per month, while with machinery he can now get out seventy-five tons per month. In a phosphate mine in South Carolina, ten men with the aid of machinery do the work formerly done by one

hundred men. In the Hocking Valley Coal Mines, one hundred and sixty men, with the aid of machinery, were in 1886 doing the work of five hundred men. In the oil industry labor saving inventions have greatly increased the wealth producing power of labor. In the manufacture of paper, four men and six girls can, with the aid of machinery, do the work formerly done by one hundred persons, and it is said they can do it very much better. In the manufacture of wall paper, one man can do the work of one hundred men. In the manufacture of railroad supplies, one man, on the average, can do the work formerly done by two men. In the manufacture of rubber boots and shoes, one man can do the work of two. In the manufacture of saws, three men can do the work formerly done by five. In silk manufacture, inventions have increased the product 40 per cent, while in weaving five men can do the work formerly done by one hundred, and in winding ten men can do the work formerly done by one hundred. In soap manufacturing, one man can now do the work formerly done by two. In the manufacture of tobacco, one man can do the work formerly done by eight. But the displacement in the manufacture of cigars has been small. In the building of vessels, one man can do the work of from four to five men formerly. In the making of wine, one man can do the work formerly done by eight men. In the manufacture of wooden goods, one man with a machine does the work formerly done by three men on hand lathes. In the manufacture of woolen goods, improved machinery in spinning and weaving have enabled one man to do the work of from five to twenty men. In some kinds of spinning one man can do the work formerly done by one hundred. "An establishment in Indiana has worked out the displacement of muscular labor by machinery very carefully and in the following ratio: In weaving woollens, one machine equals six persons; in spinning, one machine equals twenty persons; in twisting, one machine equals fifteen persons; in picking, one machine equals forty persons, and in carding, one set of patent carders will turn out more in one day than the old carder would in one week. Other houses engaged in the manufacture of the same kind of goods give the same figures."

These are the examples of what has been accomplished since 1840, practically within the last half century. Examples might be multiplied infinitely to show that the steady advance of inventions has been universal, extending to nearly all industries. This advantage has not been confined to the field of manufactures, but has extended to agriculture and to nearly all methods of extracting the raw materials from the earth. The "cradle" of our grandfathers, consisting of a scythe with a ribbed appendage for gathering the grain in bunches, operated by hand, was the approved machine for reaping grain. The grain, after reaping, was bound and shocked and stacked and sweated before being threshed. The most primitive methods of threshing and cleaning were in vogue. The whole process of harvesting was very imperfect and wasteful. It was laborious, tedious, expensive and unsatisfactory. Behold the change in that department wrought by the in-

ventive genius of man ! The other day in the San Joaquin Valley I saw numbers of combined harvesters driven by straw burning traction engines. Each combined harvester operated by four or five men reaping, threshing and sacking one hundred acres of grain in a day, making the expense of harvesting almost nominal, and reducing waste to practically nothing, saving even the straw.

In mining, steam and electricity have found their way into the bowels of the earth to lighten the labor of man. The sewing machine, driven by water or electric power, has relieved the seamstress of her drudgery. The typewriter has made light and pleasant the work of the copyist, and the type setting machine bids fair to eliminate human labor almost entirely in the mechanical work of making books and newspapers.

A little while ago, in the great temple of Mechanics' Arts at the World's Columbian Exposition in Chicago, I spent hours in watching the movements of these wonderful machines. I saw the linotype, with which the world is now familiar, casting and setting three thousand ems of type per hour, thus, in any given hour, doing the work of three expert men, and capable of continuing that work indefinitely without rest or sleep or food.

But I saw another type setting machine there that is farther ahead of the linotype than the linotype is ahead of the hand process. It casts and sets with more than human accuracy twelve thousand ems of type per hour, and will distribute in ten minutes the type set in twenty-four hours. Of course, this distribution is through the melting pot, but the type cast by the new machine, unlike the linotype, is cast separately and may be distributed and used again either in hand setting or in the cylinder type setting machine.

Nearly all of the marvelous inventions in the application of steam and electricity to the production of wealth for the satisfaction of the wants of man have been developed during the last fifty years, for, while Fulton's "Clermont" was successfully launched on the Hudson River in 1807, the developments which have produced from that original the floating ocean palaces of the present day and the magnificent battle ships and cruisers, with their forests of perfectly acting steam machinery, practically belong to the present half century.

The application of electricity belongs wholly to this period, for although Morse is said to have invented the magnetic telegraph in 1835, his first practical application and test of his invention did not take place until the construction of the trial line from Washington to Baltimore in 1844.

Then the use of electricity as a motive power was not even contemplated. Now its use as a motive power has no apparent limit.

In the campaign of 1844, several of the prominent and progressive Representatives in Congress were defeated for re-election upon the charge that they had voted thirty thousand dollars of the people's money to a schemer who pretended that by stringing a wire over poles he could send news for forty miles. One distinguished and eloquent Representative confronted with this charge is said to have been able to make no better

defense of his vote than to say he believed what the inventor said, but that he himself considered the statement almost too wonderful for belief.

Less than forty years ago, upon the completion of the telegraph line to the city of Natchez, a beautiful poem appeared detailing the wonders of the magnetic telegraph, and well expressing the feelings which its operation inspired among the people.

"Hark, the warning needles click,
Hither, thither, clear and quick;
He who guides their speaking play
Stands a thousand miles away.
Think the thought and speak the word,
It is caught as soon as heard,
Borne o'er the mountains, lakes and seas
To the far Antipodes.
Boston speaks at 12 o'clock,
Natchez reads ere noon the shock.
Seems it not a feat sublime,
Intellect has conquered time.
Sing who will of Orphean lyre,
Ours the wonder working wire."

To-day, by the aid of electricity, a man may sit in his office in Chicago and converse at will with his friend in New York, "standing a thousand miles away," and at that distance clearly distinguish not only the words, but the tones and modulations of his friend's voice. And still more marvelous, the phonograph catches and holds the words and the voices of those who speak to it, and will reproduce them when the authors are dead and turned to clay.

These inventions and improvements in wealth producing machinery, and in machinery for the preservation and distribution of intelligence, are all glorious; worthy of our highest adulations and our sincerest encouragement. They relieve man of infinite and oppressive toil. They enable him to produce means and subsistence—food, clothing, shelter and even luxuries—in one-fifth of the time which the earlier generations of men were obliged to devote to procuring the bare necessities of a rude and primitive existence. They naturally tend to lift man above the level of drudgery and make him what the Author of his being designed him to be—an intelligent director of the forces of nature in shaping the material resources of the earth to satisfy his wants. And they tend to give him time for the cultivation of his intellectual and his moral nature.

It is this triumph, comprehensively speaking, of human genius over the forces and material resources of nature that we are here to celebrate. It is the continuation of these efforts of genius to further triumphs that we are here to stimulate and to encourage.

Our heroes are not men of blood, but men of genius. The worship of warlike heroes belongs to an earlier age and to a lower civilization. The glorification of men for conquering men and for subjecting the conquered to oppression does not accord with the taste nor the judgment nor the altruistic sentiments of the modern world.

We celebrate the triumphs of man over the natural elements that are hostile to his happiness and his life, and the triumphs of men over the forces of nature which God designed to be man's servants in developing his means of subsistence, and comfort from the bounteous, immeasurable and inexhaustible natural resources with which the earth has been stored for man's sustenance and happiness.

Is it possible that these inventions, these enormous contributions to man's power over the elements of nature, have failed to benefit any of the human race that have come within the scope of their influence? Is it possible that these great achievements so well calculated to lighten the toil and increase the happiness of all mankind, have worked injury to any of our fellow men?

Looking to the inventions, and their necessary results, as causes, I unhesitatingly answer that no man has ever been injured by these advances in material progress. That their effect and tendency have always and everywhere been to benefit every human being within the range of their influence. But I have asked the question because it is being asked by good and thoughtful men and women throughout the civilized world to-day, and because in answer to that question, the deliberate judgment of millions of intelligent, thinking men and women is that their condition has been made materially worse as the result of the invention and introduction of labor saving machinery.

The enormous displacement of labor brought about by these inventions, the misery to which millions of the displaced laborers are driven in enforced idleness after being displaced by the labor saving inventions, are charged to the inventions. Side by side with the material progress of which I have spoken, there has been going on proportionately, a displacement of manual laborers formerly engaged in the production of the things now produced by the machines and methods invented. And we have observed that of the labor so displaced, a very large proportion is unable to find other means of support. Forced into involuntary idleness, they are subjected to the most terrible and heart rending suffering for lack of food, clothing and shelter, all of which are more abundantly and more cheaply produced by reason of the inventions; and all of which should be brought, and naturally would be brought, more fully within the reach of all by reason of the new processes. As I have already said, it is not within the scope of my purpose here to-day to discuss the causes of this unnatural evil result following the introduction of labor saving machinery, nor to propose remedies for the evil; but it is essential that those who advocate the further stimulation of inventions should be satisfied that they are not the cause of the deplorable and widespread misery now prevailing among the masses of our fellow men.

If I believed that material progress necessarily caused the misery and wretchedness which I have observed for many years to be widely existing among millions of our people, who are compelled to live in enforced idleness while suffering for want of the things that their labor would produce, I would

unhesitatingly oppose the further progress of inventions and favor a return to such primeval methods of wealth production as would restore the happiness once enjoyed by our people when fully employed and contented.

But I am fully convinced that the invention of labor saving machinery, and its use in the production of wealth, has no natural or necessary tendency to produce anything but good to any man or woman in the world. And I am not willing that this great agency for good shall be checked in the least because an evil existing in our social system and buttressed by our laws gives the benefit of the inventions to the few and casts the many out to misery and penury. I would remove the real cause of these evils and thus secure to the whole people the real and great benefits of this increase in the wealth producing power of labor.

The condemnation of the millions of laborers, displaced by improved methods of production, to the horrors and privations of enforced idleness, is not due to the inventions which increase man's productive power, but is due wholly to that evil element in our system of land tenure which encourages the monopoly of land and gives to private speculators the unearned increment of value arising from the presence, industry, enterprise, and virtues of the whole people, as a premium for holding the land out of use while an ever-increasing percentage of the people are suffering because of their exclusion from the land.

It is idle to assert that food and clothing and shelter are more difficult to obtain because the labor expended in producing them is diminished by man's control over natural forces. The difficulty must be wholly due to some other cause or causes. Air, water, sunlight and the land, with all of its resources, were freely given by the Creator as the common heritage of all mankind for their subsistence and comfort, with no condition imposed save that he who would apply his labor to increase the fruitfulness of the earth should have its fruits, and he who would not labor to that end, should suffer privation of the things that he might so produce.

All that is needed, that men and women should not suffer for lack of the things that labor will produce from the only source of wealth production, is that they be restored to their natural right freely to apply their labor to the land, as the God who made them and who made and gave the land for their support and comfort intended. Land monopoly, the scourge of our civilization, is caused solely by leaving the unearned increment of land to private owners. When that increment is taken for public uses, land monopoly will cease.

When land monopoly—speculation in the natural resources of the earth—shall be entirely stopped, all will share the blessings of that material progress which increases the power of man to transform the elements of nature to his service. Equality of opportunity, such as the bountiful Creator gave to all men, must be restored to them by the withdrawal of all unequal and unjust privileges now secured by law to the few. Until that shall be done, the substantial benefits of material progress will go to the few who own the

sources of subsistence and wealth, and those who do not own land suitable for their homes and industries, will be obliged to suffer and to perish just in proportion as their services can be dispensed with by those who, by monopoly privileges, control wealth production.

Monopoly of the natural resources is the cause of the evils that are falsely ascribed to inventions. Let our wrath then prevail not against the material progress which is in itself beneficent, and which of itself tends constantly and everywhere to elevate mankind, to lessen his labor, to increase his leisure time for intellectual and moral improvement, but rather against the institution which prevents this great beneficence from extending its blessings to all mankind.

Let inventions go on until every form of labor, which is not to be sought for its beneficial influence upon man's health of mind or body, shall be performed by machinery under the direction of human intelligence.

In the field of inventions California holds a pre-eminent and honorable place, and her position in this respect is very largely due to the stimulus and encouragement given to inventive genius by the Mechanics' Institute of San Francisco.

Let us hope that this great institution may continue to maintain the enviable distinction to which it has attained, and that its power for good may be constantly augmented by continued and increasing popular recognition and support.

When the applause which marked the close of Congressman Maguire's oration had subsided the incidental music to "Peer Gynt" was exquisitely rendered by the Orchestra. Following was a recitation by Miss Freda Gallick, a selection by the Knickerbocker Male Quartet, of which D. M. Lawrence, R. P. Evans, D. B. Crane, and L. A. Larsen are members, and a Bell Solo by Miss R. Sager, with accompaniment of L. Becket's Lyra Zither Club. The program was concluded by "Brahm's Festival Overture" by the Orchestra.

At 7 o'clock in the evening the Pavilion was thrown open to the public, and for twenty-nine days thereafter was well filled with interested visitors.

ALPHABETICAL LIST

— OF —

EXHIBITORS AND ARTICLES EXHIBITED.

CLASS.

- 13 Abrahamson, P., 623 Market street..... Ventilator
12 Aluminum Novelty Co., 1508 Market street..... Aluminum Novelties
16 Amelung, J. C., 10 California street..... Wine Filter
41 Ames, F. H. Co., 3 California street..... Grocers' Specialties
41 American Condensed Milk Co., 330 Pine street..... Condensed Milk
1-5 American Type Foundry Co., 405 Sansome street.....
..... Gas Engines and Printing Machinery
34 Anderson, Miss L., 721 Union street..... Fancy Work
20 Armes & Dallam, 230 Front street..... Bicycles
31 Artificial Limb Co., 26 Geary street.....
..... Artificial Limbs and Surgical Instruments
40 Asbestos Paraffine Co., 128 First street..... Asbestos Products
18 Atkinson, G. F., 11 Clementina street..... Wood Turning
34 Atiener, Miss M., 1049 Mission street..... Embroidered Quilt
18 Aver, James H., Potrero Wood Whittling
12 Baker, M. C., 607 Mission street.... Metal Work
33 Baker Manufacturing Co., 1809 Market street.....
..... Wood and Metal Letters for Signs
11-20-33 Baker & Hamilton, 2 Pine street.....
..... Agricultural Implements, Creamery Outfit, Vehicles, Bicycles
16 Barker, P. E., 138 Sutter street..... Metal Spinning
17 Bartsch, R., East Oakland..... Art Terra Cotta Work
41 Bates & Suydam, 205 Front street..... Sparkling Gelatine
13 Bell, Abraham, 606 Shotwell street..... Cooking
26 Benyakar, I., 412 Sutter street.... Oriental Rugs, Egyptian Curios, etc.
34 Beresford, Mrs., 1327 Page street..... Crazy Quilt
25 Berwin & Gassner, 131 Post street..... Sealskin Garments
37 Blohm, L., 213 Mission street. Carved Furniture
28 Bolton, Mrs. L., 526 O'Farrell street..... Millinery
21 Brownson, E. D. & Co., 1368 Market street..... Dictionary Holder
33 Brook's Sign Co., 717 Market street..... Sign Paintings
34 Bransford, Mrs. H., 3 Cleveland street..... Pin Cushion
34 Bonn, Mrs. S., 310½ Clementina street..... Bed Spread

CLASS.

- 13-16 Brown, Chas. & Son, 807 Market street.....
Ranges, Lamps and Pasteur Filters
- 40 Brown, Madame, 702 Sutter street.....Face Balm and Powders
- 23 Buchanan Bros., 609 Sacramento street..Brushes, Feather Dusters, etc.
- 46 Bullock, H. E., 970 Market street.....Fruit Box
- 19 Bruenn, A., 228 Post street.....Pianos
- 40 Burdet, F. C. & Co., Phelan Building.....Cosmetics
- 35 Burger, Miss G., 1818 Mason street.....Kensington Oil Painting
- 39 Bushnell, Fred. H., 1410 Market street.....Photography
- 18 Butterworth, Thos. C., 223 Tenth street.....Art Glass
- 42 California Champagne Co., 244 Stevenson street.....Champagne
- 46 California Condensed Juice Co., Los Gatos....Condensed Fruit Juices
- 40 California Fireworks Co., 219 Front street....Fireworks
- 21 California Furniture Co., 41 Geary street.....Bed Couches
- 40 California Ink Co., 415 Sacramento street.....Ink
- 39 Caloric Vita Oil Co., 1513 Buchanan street.....Vita Oil
- 10 Carlson-Currier Co., 6 Sutter street.....Silk Culture
- 40 Celery, Beef and Iron Co., Fourth and Townsend streets.....
Celery, Beef and Iron
- 41 Chino Valley Beet Sugar Co., San Bernardino.....Beet Sugar
- 40 Chocolate Emulsion Co., 221 Davis street....
Chocolate Emulsion of Cod Liver Oil
- 20 Christensen, J. & Co., 623 Market street.....Bicycles and Brake
- 21 Clark, Truman S., & Son, 621 Mission street.....
Woven Wire Mattress, Folding-bed
- 40 Classen & Co., 629 Shotwell street.....H & H Cleaning Compound
- 16 Cleveland Faucet Co., 208 Ellis street.....
Air Compressor, Beer Faucet and Pump
- 20 Columbus Buggy Co., 215 Market street.....Bicycles and Buggies
- 27 Columbian Woolen Mills, 541 Market street..Manufacturing of Clothing
- 34 Collins, Miss M., 558 Olive ave.....Crazy Quilt
- 20 Cooper Cycle Co., 1800 Devisadero street.....Bicycles
- 20 Cookson, W. B., 2700 Mission street.....Bicycles
- 16 Craze, J. J., 612 Merchant street.....Water Filter
- 13 Cronan, Wm., 1213 Market street.....Heaters and Ventilators
- 32 Crocker, H. S., & Co., 219 Bush street..Bookbinding, Paper ruling, etc.
- 44 Culp, J. D., San Felipe, Cal.....California Tobacco and Cigar Making
- 3 Cumming, Geo. & Co., 18 Fell street....Portable Forges and Blowers
- 19 Curtaz, Benjamin & Son, 16 O'Farrell street.....Pianos and Organs
- 33 Daily Report, 238 Montgomery street.....Stereotype Plates
- 1 Day & Hunter, 130 Main street.....Feed Water-heater and Filter
- 27 Deimel Linen Co., 218 Post Street.....Underwear
- 6 Denninston, E. G., 653 Mission street....Silver Plated Mining Plates
- 33 Dewey Engraving Co., 220 Market street.....Engraving, etc.

CLASS.

- 33 De Young, M. H. Chronicle Building.....Stereotype Plates
 6 Dodge, M. B., 21 Fremont street.....Rock Breaker
 12 Draegar, Albert, Pacheco, Cal.....Hand-made Horse Shoes
 28 Dyer, P. J., 12 Montgomery street.....Cutting School Sign
 28 Eaton & Eaton, 1228 Market street.....Dress Cutting System
 34 Edson, Mrs. C. H., 341A Bryant street.....Crazy Quilt
 31 Elliot, A. R., 440 Geary street.....Artificial Limbs
 50 Ellis, G. B., Crocker Building.....Book of Information
 40 Elkus, E. M., 211 Pine street.....Metal Polish
 40 Ely, J. W. & Co., 55 Stevenson street.....Wild Cherry Phosphate
 32 Enges, Wm., 710 Seventh ave.....Wire Jewelry
 21 Eubank, Mrs. R. G., 1458 Twenty-third ave., Oakland.....
Combined Trunk and Bureau
 2 Evans, C. H. & Co., 110 Beale street Steam Pumps and Machinery
 33 Faust, H. W., Lorin, Cal.....Maps
 40 Fraser, Dr. E. J., 406 Sutter street.....Aviva
 29 Frazer, C. E., 439 Fell street Electrical Apparatus
 39 Freeland, Robert, 509 $\frac{3}{4}$ Natoma street.....Soap
 21 Fredericks, Joseph & Co., 651 Market street...Furniture, Drapery, etc.
 43 Fredericksburg Brewing Co., 1510 Ellis street...Lager and Export Beer
 27 Fisher, Chas. & Co., 22 Sutter street.....Bicycle Leggings
 41 Fisher Packing Co., 509 Commercial street.....Pickels, etc.
 9 Flora, John, 508 Ellis street.....Models of Man-of-War
 46 Forbes, W. F., Alameda, Cal.....Ramie, Dressed
 32 Fortriede, H., 637 Market street Ivory and Amber Goods, etc.
 23 Fulda Bros., 30 Spear street.....Wood Tanks
 7 Furlong, Thomas N., 1221 Market street.....Cement Laundry Trays
 20 Gall, Wm., 608 Montgomery street Bicycle Stand
 19 Galleazzi, G., 1339 Dupont street.....Accordeons
 42 Garnier, E. & Co., 618 Sacramento street.....California Wines
 41 Ghiradelli, D. & Co., 617 Sansome street.....Chocolate
 26 Golden Gate Woolen Manufacturing Co.....Blankets, etc.
 20 Golden Gate Bicycle Co., 550 Mission street.....Bicycles
 20 Gove, J. H., Chestnut and Montgomery streets..Cal. Hand Grain Truck
 37 Grandmougin, P. C., 646 Mission street.....Clay Modeling
 13 Graff, Albert, 47 Second street.....Lamps
 13 Graham, Jas., 35 Second street.....Stoves and Ranges
 1 Graham, M. A., 105 Beale street.....Gas Engines
 45 Gray Bros., 316 Montgomery street.....Building Stone
 25 Grez, Albert, Twenty-fourth and Howard streets.....Hair Work
 39 Greensfelder, N. B. & Co., 120 Sutter street.....
“Faultless Chips” Chewing Gum
 40 Greenbaum & Co., 128 Post street...Perfumes, California Manufacture
 32 Greenbaum, Adolph, Hackmeir’s Hotel.....Electro Engraving

CLASS.

- 42 Gundlach, J. & Co., Market and Second streets
 California Wines and Brandies
- 5 Hadwen-Swain Manufacturing Co., 215 Spear street..Printing Machine
- 1 Hadwen-Swain Manufacturing Co., 215 Spear street.....Gas Engine
- 6 Hallidie, A. S., 8 Pine street.....Wire Ropeway
- 18 Hamada, G., 2213 Octavia street..... Model California Cottage
- 28 Hamburger, D. & Co., 6 Sutter street..... Corsets
- 28 Hamilton, Madame, 702 Sutter street.....Drafting Machine
- 21 Hammond & Patterson, 929 Mission street.....
 Springs for Upholstering, etc.
- 42 Haraszthy, A. & Co., 530 Washington street.....
 California Champagne and Wines
- 33 Harriman, J., 1738½, Sixteenth street.....Shorthand Instruction
- 40 Hartwell, Mitchell & Willis, 225 Post street.....
 Perfumery and Toilet Articles
- 33 Hauser, Herbert, 1423 Bush street.....Papers, Books, etc
- 29 Heald's Business College, 24 Post street.....
 Penmanship, Electrical Apparatus, etc.
- 41 Heermans, Mrs. D. M., 2617 Pine street.....Salad Dressing
- 19 Heine, G. O. & Co., 40 O'Farrell street.....Pianos
- 40 Heider, Wetzler & Thompson, Golden Gate ave. and Webster streets
 Insect Powder
- 6 Hendy, Joshua Machine Works, 38 Fremont street.....
 Mining Machinery and General Display of Iron Products of
 California Manufacture
- 21 Henko, A. V., 2116 Fillmore street.....Furniture
- 7 Henricksen, B. E., 121 Post street.....
 Adjustable Hose, Bridge and Champion Clothes Dryer
- 42 Hergert, G. L. 305 Battery street..... Malt and Rye Whiskeys
- 45 Hermann, Theo., 630 Washington street.....Sea Shells, Curios, etc.
- 15 Hermann, John, 526 Sacramento street...Fire and Burglar Proof Safes
- 1 Hicks, J. L., 667 Mission street..... Gas Engine
- 33 Hicks-Judd Co., The, 24 First street.....Bookbinding, Printing, etc.
- 25 Hilton, Wm., Berkeley, Cal.....Silk Weaving
- 33 Hill, Edward W., 628 Market street.....Mineograph
- 46 Hilgard, E. W., Berkeley, Cal.....Grains, Forage Plants
- 39 Hodson, J. R., 918 Larkin street.....Photography
- 23 Hoffman, Dahl & Co., 220 Market street.....Ice Box
- 7 Holler, J., 8 Sixth street.....Washing Machine
- 44 Holland, F., 829 Stevenson street.....Manufacturing of Smoking Pipes
- 40 Holmgren, J. A., 120 Sutter street.....Stove Blacking
- 42 Holtum Bros., 205 Market street.....Wines
- 42 Hopkins, Mrs. J., 114 Sixth street.....Millinery
- 27 Improved Asphalt Pipe Co., Bakersfield, Cal.....Asphalt Pipe

CLASS.

- 20 Indiana Bicycle Co., 18 McAllister street..... Bicycles
 17 Inyo Marble Co., Mills Building..... California Marble
 42 Italian-Swiss Agricultural Colony, 109 Battery street..... Wines
 — I X L Tamale Co I X L Tamales
 40 Jessen, H., 28 Ninth street..... Germatine
 45 Johnson & Emigh, 10 Post street..... California Wild Flowers
 6 Johnston, George, Howard and Beale streets.. Bryant Mill Concentrator
 17 Jones Bros. & Co., Second and Brannan streets.....
 Finished Marble Monuments
 39 Jones, G. H., Columbian Building..... Photography
 27 Keller, M. J. Co., 1105 Broadway, Oakland..... Gentlemen's Shirts
 21 Kelley, Hugh, 302½ Fourth street..... Beer Cooler
 45 Kelley, R. E., 210 Hyde street..... Minerals
 34 Kelley, Mrs. R. E., 210 Hyde street..... Fancy Quilt
 27 Kent, Thomas E., 597 Mission street..... Bicycle Clothing
 6 Kennedy, J. M., 630 Market street..... Star Placer Amalgamator
 18 Kenny & Wells, 422 Sutter street.....
 Grill Work and Inlaid Parquet Floors
 7 Kimball, Frank A., National City, Cal Marble
 9 Kneass, Geo. W., 718 Third street..... Boats
 19 Kohler & Chase, 26 O'Farrell street.... Display of Musical Instruments
 40 Kohn, H., 318 Market street..... Shoe Dressing and Blacking
 19 Kreling, F. W. & Sons Co., 209 Powell street..... Banjos
 1 Krogh Manufacturing Co., 31 Stevenson street.....
 Pumps, Mining Hoists, etc.
 30 Kuttner & Co., 1644 Market street..... Optical Goods
 40 Lash's Bitters Co., 1117 Mission street..... Lash's Bitters
 32 Lassen, O. C., 552 Mission street..... Electro Plating
 28 Lawrence, Mrs. E. D., 1231 Market street.. Method of Garment Cutting
 32 Levy, M. L., 112 Kearny street.. Silver Tankard, etc.
 5 Levy, Oscar L., 207 Market street..... Whitely Exerciser
 2 Lightbody, J. P., 105 Beale street..... Water Elevator
 29 Linton, C. B., Grand Southern Hotel, Seventh and Mission streets
 Electrical Goods
 32 Lucas, M. F., 121 Post street..... Jewelry Engraving
 24 Lyons, Chas., 1214 Market street. Gentlemen's Clothing
 5 Maguire, Joseph A., Sather Bank Building..... Punching Machine
 39 Marceau, Theodore C., 826 Market street..... Photography
 3 Market Street Railway Company, Hobart Building.....
 Wheel Grinding Machinery
 20 March-Davis Cycle Co., 729 Market street..... Bicycles
 40 Marchand, Madame L., 121 Post street..... Cosmetics
 33 Marsh & Kidd, 532 Market street..... Linen Marker
 43 Martin, W. H., Oakland, Cal..... Cider and Lemonade

CLASS.

- 3 Marwedel, C. F., 58 First street...Bicycle Materials and Machinists' Tools
- 21 Marwedel, E. H., 712 Mission street.....Brass and Iron Bedsteads
- 5 Merchants' Association, 120 Sutter street.....
.....Street Paving Materials and Machinery
- 29 Mershon, D. T. & Co., 630 Market street Telephones
- 6 Merralls, W. A., Mills Building.....Hydraulic Quartz Mill
- 1 Mery, M. L., Chico, Cal.....Gas Engines
- 6 Midas Gold Saving Machinery Co., 114 First street.....
.....Gold Saving Machinery
- 33 Miles, Thos. E., 146 First street, San Jose.....
.....Lightning Card Printing Machine
- 19 Miller, Louis, 842 Howard street.....Accordeons
- 41 Miner, W. H., 27 Stevenson street.....Cocoa and Chocolate
- 14 Model Window Hinge Co., 331 Montgomery street....Window Hinges
- 1 Moore, Chas. & Co., 32 First street.....Engines, Boilers, Pumps, etc.
- 30 Moses, S. A., Golden West Hotel.....Optical Goods
- 34 Muirhead, Mrs. J., 2 Hayes street.. Fancy Work
- 40 Mulhern, John, 124 Market street.....
.....Green Ginger Brandy and Flavoring Extracts
- 19 Muller, Hermann, 2 Latham Place.....Stringed Instruments
- 24 Muller, Henry, 89 Ninth street.....Boots and Shoes
- 34 Muller, Mrs. M., 653 Minna street.....Crochet Skirt
- 5 Multi Motor Co., 513 Mission street.....Windmills
- 5 Murray, W. H., 807 Castro staeet.....Ramie
- 40 Mutual Manufacturing Co. (Limited), 36 Jessie street.....
.....Inks, Extracts, Polish, etc.
- 5 McAnslan, Wm., 1012 Twentieth street.....
.....Nickel-in-the-slot Cigar Machine
- 38 McDowell Drafting Garment Co., 213 Powell street.....
.....Drafting Garment Machine
- 6 McGlew Ore Concentrator Co., 132 Market street....Ore Concentrator
- 40 McLean, Dr. Jas. & Son, 1228 Market street.....
.....Australian Medical Products
- 34 McMahan, Miss M., 655 Harrison street.....Fancy Work
- 41 McNear, George W., 306 California street.....Flour
- 24 McNulty, P. F., 131 Post street.....Boots and Shoes
- 40 Naber, Alfs & Brune, 323 Market street.....Damiana Bitters
- 34 Neitler, Mrs. M., 1534 Clay street.....Fancy Work
- 40 Nelson, Victor, 128 Hayes street.....Amycose
- 24 Nelson, Miss N., 1241 Sanchez street.....Crazy Quilt
- 25 Neumann, Jos., 223½ Austin ave.....California Silk Worms
- 27 Newbauer & Levy, 12 Montgomery street.....Renovated Clothing
- 39 Newman, J. C., 20 O'Farrell street.....Hair Tonic
- 41 New England Soap Co., 307 Sacramento street.....Soap

CLASS.

- 25 New Woman's Club, 317 Mason street.....Embroidery, Pottery, etc.
 24 New York Belting and Packing Co.....Rubber Goods
 28 Nixon, Miss N., 1221 Market street.....Seamless Dress Waist
 29 Noble, J., Market and City Hall ave.....Photography
 13 Oakland Stove & Novelty Works, Cedar and Seward streets, Oakland
 Stoves and Hardware
 5 O'Brien, M., 511 Mission street.....Flour Mill Machinery
 1 Ohmen, W. H., 107 Fremont street.....Compound Engine
 20 Ontario Cycle Co., 630 Market street.....Bicycles
 5 Osborn, Henry, 1906 Golden Gate ave.....
 Swinging Apparatus for Windows
 40 Pacific Coast Borax Co., 101 Sansome street.....Borax Products
 21 Pacific Fringe Co., 115 Minna street.....Silk Cord and Fringe
 5 Pacific Identification Co., 306 Pine street.....Identification Badges
 5 Pacific Manufacturing Co., 575 Mission street...Windmills and Pumps
 4 Pacific Saw Manufacturing Co., 31 Stevenson street.....Saws
 5 Pacific States Type Foundry, 409 Washington street.....
 Williams Typewriters
 25 Pacific Steam Whaling Co., 30 California street.....
 Whalebone and its Manufactures
 40 Paraffine Paint Co., 116 Battery street.....
 Building Roof Paper, Paints, etc.
 40 Payne, Mrs. Maud, 614 Filbert street, Oakland.....
 Fruit and Vegetable Preserves
 8 Perkins, Joseph, Twenty-fourth and Guerrero streets.....Hose Reel
 1 Perkins Pump and Engine Co., 117 Main street.....
 Gas Engines and Pumping Machinery
 5 Peterson L., 226 Market street.....Models of Inventions
 34 Pettee, Mrs. J., 3505 Leavenworth street...Fancy Cross of Fish Scales
 46 Pleasanton Hop Co., Alameda, Cal.....Hops
 21 Plum, Chas. M. & Co., 1501 Market street.....Furniture
 13 Quade, A., 636 Market street.....Coffee Pots
 33 Quane, J. F., 415 Market street.....Stencil Sign Machine
 6 Radovich, L., Commercial Hotel.....
 Mining Machinery, Rock Breaker, etc.
 16 Rapid Safety Filter Co., 1537 Market street.....Water Filter
 24 Rios, Placido, 1015 Market street.....Embossed Leather Work
 20 Rottanzi, G., 1027 Market street.....Bicycles
 41 Rathjen Bros., 21 Stockton street.....Coffee and Coffee Pots
 34 Reed, Mrs. W. W., 130 Precita ave.....Crazy Quilt
 38 Reidsma, B. M., 125 Grove street.....Card Writing
 33 Rickey & Adler, 2132 Fillmore street.....Blotting Pad Machine
 1 Rolfson, R. J., 424 Bay street.....Gas Engines
 42 Rossi, P. C. & Co., 318 Montgomery street.....Wines

CLASS.

34	Rumble, Mrs. A. C., 1517 Golden Gate ave.....	Embroidery
5	Ryan, T. W., 440 Fulton street.....	Weighing Machine
30	Sala, Joseph, 429 Montgomery street... ..	Surveying Instruments
7	Sale, T. A., 411 Grove street.....	Washing Machine
6	Salsbury, George M., 232 Lily ave.	Gold Separator
2	Sanford, A. B., 1016 Howard street..	Aquameter Steam Pumps
5	San Francisco Authographic Register Co., 523 Market street.	
		Authographic Registers
16	San Francisco Gas Improvement Co., First and Natoma streets....	
		Gas Appliances
42	Sbarbaro, A., 524 Montgomery street.....	California Wines
2	Schetzcl, M. P., 6 Eddy street... ..	Rotary Pump
20	Schindler, H. B., 128 Spear street.....	Truck
5	Scott & Bannan, 320 Montgomery street.....	Bar Lock Typewriter
21	Seavey & Durand, 1427 Mission street.....	Furniture
12	Selby Smelting and Lead Works, 416 Montgomery street.....	
		Lead and its Manufactures
26	Shehadi, S., 1515 Broadway street.....	Egyptian Goods
14	Shotwell, Mrs. B., 1705 Howard street.....	Needle Threader
24	Siebe-Glanville Co., 21 Jessie street.....	Shoes and Lasts
33	Simmons, G. & Co., 304 S. Spring street, Los Angeles..	Rubber Stamps
14	Sloper, J. M., 534 Jersey street.....	Window Hinge
20	Smith, Geo. C., 126 Kearny street.....	Cyclometers
32	Sonnenfeld, S., 331 Kearny street.....	Precious Stones
26	Spaulding, J. & Co., 353 Tehama street.....	Carpet Renovating
	4-29 Spaulding, N. W., 17 Fremont street.....	
		Saws and Genrty Electric Elevator
41	Standard Soap Co., 525 Market street.....	Soaps, Candels, etc.
19	Statham & Co., 106 McAllister street.....	Pianos
43	Steiger, W. H., 313 Kearny street.....	Root Beer
13	Steiger & Kerr, 350 Main street.....	
		California Ranges and Adjustable Grates, etc.
11	Stenke, F., 21 Eleventh street.....	Pruning Shear and Fruit Canner
24	Stone, L. D. & Co., 417 Market street.....	
		Harness, Saddles and Cowboy Goods
34	Storer, Mrs., E. W., 1018 Larkin street.....	Bedspreads
18	Strand A., 860 Folsom street.....	Inlaid Wood-work
14	Surety Window Hinge Co., 220 Market street.....	Window Hinge
5	Superior Windmill Co., 421 Market street... ..	Windmills
20	Swenarton, J. A., 24 San Pablo ave, Oakland.....	Bicycles
41	Thain Bros., 781 Market street.....	Popcorn, Candy and Ice Cream
27	Thomas, F., 27 Tenth street.....	Cleaning and Renovating
20	Theisen, F. W. & Co., 1223 Market street.....	Delivery Wagon
33	Tietjen, G. H. 575 Mission street....	Wood and Metal Letters for Signs

CLASS.

- 38 Touchard, Mrs. M. 131 Post street..... Art Work
 26 Turkish Rug Co., 324 Sutter street..... Rugs, etc.
 6 Turman, B. J., Fourth and Channel streets.....
 Amalgamator and Concentrator
 28 Turner, George A., 11 Montgomery street..... Curling-iron Holder
 13 Universal Gas Saving Association, 1187 Market street.... Gas Regulator
 45 University of California, Berkeley, Cal..... Industrial Drawings
 16 Van de Mark, F. L., 1020 Castro street..... Water Filter
 29 Van der Naillen, Albert, 723 Market street..... Electrical Display
 20 Varney, Thomas, H. B., 1325 Market street..... Rambler Bicycles
 18 Verhaghen, A., 14 Dore street..... Stained Glass
 39 Veronica Mineral Water Co., 431 Turk street..... Mineral Water
 19 Vidal, Isidor, 405 Kearny street..... Spanish Fans
 41 Von Sohnen, Herman, 765½ Howard street..... Illuminated Eggs
 45 Wainwright & Easton, 30 Market street..... Coal
 5-12 Washburn & Moen Manufacturing Co., 8 Pine street.....
 Nail Making Machinery, Wire Rope
 9 Watts & Trott, Third and Washington streets, Oakland..... Rowboat
 34 Vestey, Mrs. E., 440 Third street.....
 Skeletonized Leaves, Mosses, Wild Flowers and Lace Work
 24 Wegener, H., 510 Market street... Saddles and Stamped Leather Goods
 33 Werner & Co., No. 7 City Hall ave..... Books
 20 Western Premier Cycle Co., 312 Baker street..... Bicycles
 16 Westover, Wm., 319 Pine street..... Water Filter
 42 Wetmore-Bowen Co., 141 Montgomery street..... Cresta Blanca Wines
 40 Wheelock, Mrs. L. J., Grant ave. and O'Farrell streets.. Toilet Articles
 32 Wickham, Miss A., 18 Pearl street... Precious Stones and Setting Same
 1-6 Wickson, G. G., 3 Front street..... Steam Engine and Rock Breaker
 13-15-20 Wilson, Jos. A., 119 Bush street.....
 Egg Turner, Burglar Alarm and Bicycles
 40 Wilson, J. T., 503 Montgomery street..... Chemical Polish
 3 Winans, J. C., 220 Fremont street..... Engineers' Specialties
 23 Woerner, David, Fourteenth and Harrison streets..... Cooperage
 41 Wolff, J., 116 California street..... Cocoa and Chocolate
 6 Woodbury, Geo. E., 143 First street..... Mining Machinery
 31 Young, Dr. H. G., 1841 Polk street.. Dental Goods and Specimen Work
 40 Yucca Root Soap Co., 57 Union street..... Soap and Perfumery
 23 Zan Bros., 310 Davis street..... Brooms, Brushes, etc.

CATALOGUE

OF THE

ART DEPARTMENT.

OIL PAINTINGS.

<i>Title</i>	<i>Artist</i>
Roses.....	Alice B. Chittenden
Glazenwood Roses.....	Josephine Bayley
Carnations.....	Sarah E. Bender
Solfrano Roses.....	Sarah E. Bender
Daffodils.....	Martha Patterson
Avarice.....	Eleanor Warren
The Day After.....	Selina Newman
Daffodils.....	Martha Patterson
The French Girl.....	F. M. Vermorcken
Portrait.....	F. M. Vermorcken
Madame Cecilia.....	F. M. Vermorcken
A Study Out of Doors.....	L. P. Latimer
Duchess Roses.....	Josephine Bayley
Violets.....	Sarah E. Bender
Portrait of a Lady.....	Selina Newman
Rustic Bride.....	G. Cadenasso
Under the Oak (in Alameda).....	G. Cadenasso
Abandoned Road (South S. F.).....	G. Cadenasso
Portrait of a Gentleman.....	Selina Newman
Double Daffodils.....	Josephine Bayley
Chinese Child.....	Selina Newman
Child's Portrait.....	Selina Newman
California Violets.....	Sarah E. Bender
Wild Violets.....	Sarah E. Bender

<i>Title</i>	<i>Artist</i>
Wall Flowers.....	Sarah E. Bender
Portrait of Capt. Morse.....	J. D. Strong
Peaches	A. Weber
Le Cardinal.....	A. Weber
Le Figaro.....	A. Weber
Still Life.....	J. A. Stanton
Old Breton Lady Peeling Potatoes.....	J. A. Stanton
The Tudor Shields.....	J. Milo Griffiths
Dawn, Marble Bas Relief.....	J. Milo Griffiths
La France Roses.....	L. M. Carpenter
Pink Roses and Jar.....	M s. W. E. Shepman
Red Roses.....	Mrs. W. E. Shepman
Looking Backward.....	Miss Annie Hein
Piedmont Oaks	Bertha Stranger Lee
Horticultural Hall.....	Bertha Stranger Lee
Receding Fog (Ocean View).....	G. Cadenasso
Lilacs.....	Lillian L. Kendall
Chrysanthemums.....	Mary T. Menton
Clam Diggers (on Shoalwater Bay).....	A. Best
Roses	Alice B. Chittenden
The Hunter.....	H. C. Best
Hand-painted Screen.....	Mrs. Burton
Portrait, Irving Scott.....	Wm. Keith
Landscape.....	Wm. Keith
Study of 'Tea Roses.....	A. L. Best
Study.....	N. F. Binckley
Sunset on Shoalwater Bay.....	A. W. Best
Study (Chinese Musician).....	E F. Van Winkle
Study of Tea Roses.....	Nellie E. Burrell
A Forty-niner.....	N. F. Binckley
Dakota Half-breed.....	A. N. Best
An Important Bulletin.....	Sidney Armer
Portrait of a Lady.....	N. F. Binckley
A Street Arab	Lucia Wores
Poverty's Sacrifice.....	Mrs. M. J. Numan
Close of a Summer Day.....	Mrs. S. H. Mason

<i>Title</i>	<i>Artist</i>
The Long, Long, Weary Day.....	Lucia Wores.
Russian Violets.....	Lillian L. Kendall
Rising Storm.....	E. Cagniart
Le Vieux Moulin.....	P. Peraire
Tourville la Riviere.....	H. C. Delhy
Andelys	P. Peraire
Willows.....	P. Peraire
Cardinal (reading).....	A. Weber
Priest (drinking)....	A. Weber
Sunset in the Landes (France).....	E. Cagniart
The Rival Queens.....	Miss Annie Hein
Mill Valley Poppies....	Nellie E. Burrell
Study of Poppies.....	Nellie E. Burrell
Copy from Meissonier.....	A. L. Best
A Nice Mess.....	Nellie E. Burrell
Just From the Sea.....	Nellie E. Burrell
Golden Gate Park Roses..	Nellie E. Burrell
Portrait of Countess Noble	A. De Wolt Payne
Potatoes	Susan Loosely
A Little Student	Lou E. Wall
Portrait of Mrs. G.....	Lou E. Wall
A Glimpse of Lake Merritt.....	Annie Harmon
Presidio Sand Dunes.....	Marion M. Frolich
A Road in Alameda.....	C. Burnet
A Meadow.....	Lambinet
After the Rains	Annie Harmon
Fruit.....	C. R. Snellgrove
Brightening Brasses	Lou E. Wall
Purity.....	Mrs. A. De Wolt Payne
Off the Whistling Buoy.....	H. R. Deitz
Iris.....	O. Kaltschmidt
Renunciation.....	O. Kaltschmidt
An Indian Baby.....	G. Hudson
The Joiner's Wife.....	A. Hoelsel
A View in Cevenes.....	H. Roullier
The Little Gretchen.....	Mrs. Wm. Hahn

<i>Title</i>	<i>Artist</i>
Upper End Loch Lomond (Scotland).....	Alex. Nicholson
Some California Fruit.....	Wm. Hubacek
Tea Set	Wm. Hubacek
Landscape.....	A. C. Rodriguez
Portrait.....	E. Tojetti
Goddess Riding a Dragon.....	F. Kano
Ready for Christmas.....	Wm. Hubacek
Marsh in San Mateo.....	Wm. Hubacek
Alameda Sand Dunes.....	A. Joullin
Alameda Oaks	A. Joullin
Alameda Sand Dunes.....	A. Joullin
Park Sand Dunes.....	A. Joullin
Alameda Oaks.....	A. Joullin
Spring.....	A. Joullin
Turk Sword-fighters.....	A. Joullin
Presidio Marsh.....	A. Joullin
Portrait.....	Henry Raschen
Study.....	Henry Raschen
In the Garden.....	Henry Raschen
Girl Watering Flowers.....	Henry Raschen
Landscape.....	C. V. Perbank
Still Life.....	O. Soyede
Still Life	K. Takahashi
A Greek Philosopher.....	E. F. Van Winkle
Portrait of J. Hamilton.....	J. D. Strong
French Girl.....	F. M. Vermorcken
Sailors at Home.....	F. M. Vermorcken
Midwinter Fair	Arthur F. Mathews
Horse Fair.....	Rosa Bonheur
Red Roses	Mrs. E. F. Howe
The Weekly Wash.....	A. F. Mathews
California Scrub Oak.....	Wm. Keith
Landscape.....	C. V. Perbank
Landscape.....	C. V. Perbank
Landscape.....	C. V. Perbank

WATER COLORS.

<i>Title</i>	<i>Artist</i>
A Native Daughter.....	Lillian Candlin
Study at Berkeley.....	L. P. Latimer
A Bit of Spring.....	L. P. Latimer
Little Portrait.....	Miss E. Warren
Little Portrait.....	Miss E. Warren
Head.....	Lou E. Wall
Garden Gate (near Monte Allago).....	Chris. Jorgensen
Lucile.....	Lillian M. Candlin
Studio Corner.....	Lou E. Wall
Road to Rome.....	Chris. Jorgensen
Near Aptos.....	Chris. Jorgensen
Sketch.....	Lou E. Wall
Afternoon.....	Susan Loosley
In Japanese Costume.....	Susan Loosley
A Cloudy Day.....	Susan Loosley
Evening in Valley of Christ (Italy).....	Chris. Jorgensen
A Study.....	Lou E. Wall
Callas.....	Miss Ellenor Warren
Hay Field (under the Oaks).....	L. P. Latimer
A Berkeley Pastoral.....	L. P. Latimer
Sketch.....	Lou E. Wall
A Choppy Sea.....	H. R. Hopps
Looking South.....	Mrs. Thos. Gihon
Old Fishing Boats (Monterey).....	Kate Chandler Thompson
Sketch (New Jersey).....	Mrs. Clara Curtis
Morning (Alameda).....	Mrs. Clara Curtis
On the Hill Side; Japan (water color).....	R. Blum
"There Was No White Swan" (water color).....	A. Lynch
Nurse and Baby (water color).....	W. T. Smeadley
Grain Field (New Jersey).....	Mrs. Clara Curtis
Low Tide.....	Mrs. Clara Curtis
A Gray Study.....	Mrs. Clara Curtis

<i>Title</i>	<i>Artist</i>
Path to the Foothills.....	Mrs. Clara Curtis
Drawings.....	Emily La Vallie
Violets.....	Mary T. Menton
Bit of Lake Tahoe... ..	Mary T. Menton
Wing and Wing.....	Mrs. Thos. Gihon
Morning at S. F. Docks.....	Mary T. Menton
A Study.....	Kate Chandler Thompson
A Morning in Spring.....	Gertrude Dorgan
A Marine.....	Gertrude Dorgan
Beach (from Golden Gate Park).....	Mrs. Thos. Gihon
California Callas.....	Lucia Wores
Playing Checkers (water color).....	Maria Martinetti
Bedouins (water color).....	G. Goban
Portrait (in Pastel).....	Alice B. Chittenden
Portrait (in Pastel).....	Alice B. Chittenden
Whaler Outward Bound.....	H. R. Hopps
Time Sketches.....	Martha Patterson
S. F. Chronicle Exhibit.....	Chronicle Artists
Pen and Ink Sketches.....	E. C. Peixotto
Pen and Ink Sketches.....	E. C. Peixotto
Pen and Ink Sketches.....	E. C. Peixotto
Charcoal Study (Mrs. Cadenasso, from life).....	G. Cadenasso
Meditation.....	Mabel G. Williamson
Pen and Ink Sketch.....	Homer Davenport
Pen and Ink Sketch.....	Homer Davenport
School Photos.....	Miss Eleonor Frauenholz
Girl Playing Piano (water color).....	Howard Pyle
A Corner in My Studio (oil painting). ..	G. Cadenasso
School Photos.....	Eleanor Frauenholz
Venus' Toilet.....	Blanche Loubens
Sketch (pen and ink).....	Homer Davenport
Portrait.....	H. A. Verbeck
School Photos.....	Eleanor Frauenholz
Portrait of E. J. Colman.....	J. D. Strong
A Favorite Greyhound.....	J. B. Wandesford
Study of Watermelon.....	Mr. Rumble

<i>Title</i>	<i>Artist</i>
Hebe	Murillo
Scene in the Redwoods	J. B. Wandesford
Passing Express Train.....	George Frere
The Flower Girls of Genoa.....	G. Pennalesilico
Moonlight Scene in African Forest.....	G. Wertheimer, Paris
The Favorite Dish.....	A. Sani, Florence
Marguerite.....	Maria Martinetti
Bois de Boulogne.....	P. Garvani, Paris, Salon of 1887
Fisherman Drawing the Net....	J. E. Robinson

FIRE ETCHINGS.

California Oaks.....	Grace G. Livermore
Ecce Homo (after Guido Reni)....	Lillian O'Hara
Head of an Old Man (after Titian).....	Lillian O'Hara

Tapestry and Decorated Porcelain.

Decorated Plaque.....	Miss E. Stallman
Case Decorated Porcelain	Miss E. Stallman
Tapestry and Decorated Porcelain.....	Miss Adela E. Dugan
Case Decorated Porcelain.....	Helen D. Philipe
Tapestry.....	M. A. Terry
Tapestry.....	O. A. Vermorcken and V. E. Barozzi

STATUARY AND BAS RELIEF.

Bas-relief Portrait.....	M. Selig
Bust	Carrie D. Terry
General Sheridan.....	J. Milo Griffith
Laughing Child.....	Carrie D. Terry
Bronze Figure.....	J. Milo Griffith
The Nubian Captive.....	J. Milo Griffith

<i>Title</i>	<i>Artist</i>
Dr. D. McLean.....	J. Milo Griffith
Gov. Downey.....	Rupert Schmidt
Dr. Richter.....	Rupert Schmidt
Bust.....	Rupert Schmidt
Bronze Bust of John T. Doyle.....	Rupert Schmidt
Willows.....	P. Peraire

TERRA COTTA WARE.

(Exhibited by Nathan, Dohrman & Co.)

AMERICA.

Group, Hebe; group, Psyche; group, Schiller and Goethe; bust, Napoleon.

VIENNA.

Group, Singer. Group, Judith. Terra Cotta Bust, Castilian Beauty.

ITALY.

Florentine Mosaic Table. Florentine Marble Bust, "Marguerite."

HOLLAND.

One Blue Plaque (after Rembrandt).

PARIS.

Bronze Group, Amazon.....

Bronze Urn, enameled and onyx.....

Fancy Table.....

Gold enameled and onyx Card Tray (made in France).....

Bronze Group, "Gloria," by Bareau.....

Hall Table (Carved in S. F.).....

PEN AND INK.

At the Horse Show..... Charles Dana Gibson

The Hopewell-Bonds Abroad..... Charles Dana Gibson

Washington Correspondents on a Friendly Base with Cabinet Officers

..... W. T. Smeadley

<i>Title</i>	<i>Artist</i>
Stage Coach.....	Walter L. Saalburg
Tired.....	Malle J. Williamson
Newspaper Correspondents Waiting for Copy (black and white).....	
.....	W. T. Smeadley
Wood Carvings.....	Chas. M. Plum & Co.

UNIVERSITY OF CALIFORNIA.

DEPARTMENT OF

DECORATIVE AND INDUSTRIAL ART.

This department of the State University was only established last year; hence the smallness of the exhibit.

• Most of the work displayed is the result of the first year's work, but a few pieces of original work are also introduced that were made by Professor Ardley's students prior to that time.

No.

1. Geometrical Designs, Based on Vertical, Horizontal and Oblique Lines.
- 2-3. Designs in which Straight, Inclined and Curved Lines are Used.
4. Designs Based on the Circle and its Segments.
- 5, 6, 7, 8. Miss. Elementary Geometric Designs.
9. Plants Adapted to the Square.
10. Plants Adapted to the Pentagon.
11. Plants Adapted to the Circle.
12. Plants Adapted to the Triangle.
13. Plant Units Adapted to Borders.
14. Plant Units Adapted to All-over Surface Decoration.
- 15, 16, 17. Plant Analysis for Use in Design.
- 18, 19. Blanket Borders.

No.

20. Pen and Ink Sketches from the Object.
- 21, 22. Original Designs for Stone and Wood Carving.
23. Wall Paper Borders (reproduced).
24. Original Renaissance Units for Surface Decoration.
- 25, 26, 27, 28. Elementary Wall Paper Designs.
29. Design for Yachtman's Dining Room Decoration.
30. Plant Forms Adapted to Geometric Spaces.
31. Designs for Book Covers.
32. Designs for Tile Flooring.
33. Designs for Stained Glass Windows.
34. Designs for Wrought Iron Grills.
35. Designs for Wrought Iron Gate.
36. Water Color Studies from Nature.
37. Crayon Study of Eagle from Nature.
- 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50. Crayon and Charcoal
Drawings of First and Second Year's Work.
51. Design for Hall Settee (full size details).
- 52, 53, 54. Wood Carvings (First and Second Year).

REPORT UPON THE ARTICLES

EXHIBITED AT THE

TWENTY-EIGHTH INDUSTRIAL EXPOSITION

This year a very important departure was made from the usual form of awarding premiums by the substitution of percentage cards to be rendered by the Judges, instead of the usual report for the best exhibit. One hundred was to be considered perfection, and Efficiency, Design, Workmanship and Display the four points on which the Jurors should pass judgment, giving such percentage to each, as after examination they believed the article entitled to. Then the sum of all percentages given by the Jurors to an exhibit were added together, and after a careful compilation and tabulation by an expert, the article having the highest aggregate amount of credits was, by the Board of Trustees, awarded the "Certificate of Superiority," being the only premium given to general exhibits and taking the place of the gold, silver, bronze medals and diplomas formerly given. The number of Judges in each class were either three or five, and when the average percentage was below seventy no awards were given.

For Premiums Awarded see Classified List.

CLASS 1.

Engines, Boilers and Appliances.

W. H. OHMEN.—Automatic Compound Steam Engine with non-detachable valve gear; Pacific Coast Manufacture.

The main feature of this engine is that the high pressure cylinder joined to the low pressure cylinder by a flanged head being placed between the two cylinders, and in this head is formed the packing glands, the pistons being of the usual construction and both attached to the same rod. The low pressure cylinder is provided with a common slide valve and operated by a valve rod. The high pressure

cylinder is furnished with oscillating valves, one being the main distributing valve and the other the cut-off valve for regulating the admission of steam, being controlled by means of a centrifugal governor that determines the time of its closing in the usual manner of cut-off engines. Both high pressure valves are operated by cranks and valve rods. It will be observed that by employing oscillating valves for the high pressure cylinder and a slide valve on the expansion cylinder, the position of the motion rods for operating these valves is such that no interference results and that these rods can extend directly from the eccentrics to the valves. A test of a sixty horsepower engine of this style showed twenty pounds of water per horsepower per hour. A patent was granted covering the above improvements on May 10, 1892.

CHAS. MOORE & Co.—Engines, Boilers, Heaters, Pumps, Etc.

This exhibit consisted of engines and engineers' supplies, and was distributed among various exhibits, engines being furnished by this firm to drive various machinery.

AMERICAN TYPE FOUNDRY.—Gas Engines and Printing Machinery.

Gas Engines and Printing Machinery of late and improved construction were exhibited by this firm. The exhibit was located in the annex and formed an interesting and important feature to that part of the Exposition.

M. L. MERY, Chico, Cal.—Gas Engine.

This exhibitor displayed a Gas Engine of novel construction, being of the double acting type, having the general appearance of an ordinary steam engine. Many requirements which are unattainable in ordinary gas engines were accomplished apparently with ease by this engine, such as running at an extremely slow rate of speed, or at a very high speed, and in both circumstances with smoothness and regularity. Altogether this engine seemed to give promise of being an extremely valuable addition to that class of engines which use gas and oil as their motive power. The sparking boxes, governor and generator on his engine were especially commendable and received the award.

J. L. HICKS, 667 Mission St.—Gas Engine.

This exhibitor displayed an extremely neat and compact engine in operation driving a dynamo which furnished electric light to illuminate his exhibit. The mechanism of the engine is simple and direct, and the whole display was extremely creditable to the exhibitor.

R. J. ROLFSON, 423 Bay St.—Gas Engine.

The Gas Engine displayed by this exhibitor contained many novel features, among which was to be noted a reversing mechanism in many respects similar to that used in marine steam engines.

HADWEN SWAIN M'FG. Co.—Gas Engine and Printing Machinery.

The Engine and Presses exhibited by this firm were in practical operation during this Fair and attracted much attention by their perfect action and effective work.

G. G. WICKSON & Co.—Steam Engine.

This 10x12 steam engine furnished power to drive the line of shafting located on the Grove street side of the Pavilion, from which was derived the power to operate all of the machinery on that side.

DAY & HUNTER.—Water Heater and Filter.

This device was used in connection with the Institute boiler to heat and purify the feed-water. Its construction is extremely simple and its operation apparently satisfactory.

CLASS 2.**Hydraulic Machinery and Steam Pumps.****PACIFIC M'FG. Co. —Windmills, Pumps, Etc.**

The display by this exhibitor was extremely large and interesting, and attracted much attention for the tasteful manner in which it was exhibited.

C. H. EVANS & Co., 110 Mission St.—Steam Pumps and Machinery.

A large and varied assortment of power and steam pumps and kindred machinery was displayed in this exhibit, which formed a striking and interesting feature of Machinery Hall.

KROGH M'FG. Co.—Pumps, Mining Hoists, Etc.

This firm made probably one of the most striking displays in Machinery Hall, their enormous centrifugal pump throwing a stream of water 12 inches in diameter, amounting to 12,000 gallons of water per minute. They also displayed many other mechanical devices of great importance pertaining to pumping, hoisting and mining work, and although a new firm in their line of manufacture, will undoubtedly in future absorb a great portion of the mining and pumping machinery business of the Coast.

J. P. LIGHTBODY, 105 Beale St.—Water Elevator.**M. P. SCHETZEL, 6 Eddy St.—Rotary Pump.**

This exhibit hardly proved as satisfactory as the sanguine hopes of its inventor wished, and we wish him better luck next time.

CLASS 3.

Metal Working Tools and Machinery.

MARKET STREET RAILWAY Co.—Wheel Grinding Machinery in operation.

The enterprise of this corporation has never been more interestingly displayed than in the exhibit they had in the past Exposition. It consisted of a ponderous and beautiful machine used for the purpose of grinding the treads of car wheels. In course of the ordinary wear and tear of car wheels doing their active work, the soft parts in their peripheries display themselves by forming flat places. In a very short time, after being used, these flat spots rapidly develop, and were they not attended to, the wheel would soon terminate its sphere of usefulness. They are taken out of the track to the shop, placed in the grinding machine, and trued up with great rapidity and accuracy. They are then ready for a further term of service. It is said that by means of this machine, the life of the car wheel is extended to three and four times that which they would were the services of this machine not available. The machine consists of lathe heads with centers which support the axle of the car wheels in a horizontal position while being rotated by the driving devices. Rapidly rotating emery wheels upon a sliding frame are, by suitable mechanism, brought into grinding contact with the periphery of the car wheels, whereby the surface of the wheel treads are ground to a perfectly circular form and correct contour, the whole operation beautifully illustrating the perfection of modern high class heavy machinery.

The exhibit, it is hoped, will serve as an example of what the larger and more important firms can and should do for the advancement of mechanical education at our Exposition, and it is also hoped that it will have its proper effect in the forthcoming Exposition.

J. C. WINANS, 220 Fremont St.—Engineers' Specialties.

The exhibit of this firm was very interesting in a line of industry which forms a great and varied portion of the necessary equipments of all industrial pursuits. It consisted of all those details which, though not striking in themselves, form the essential details of steam engineering.

C. F. MARWEDEL, 58 First St.—Machinists' Tools and Bicycle Materials.

The artistic and beautiful display of machinists' tools and bicycle materials by this firm formed a most noticeable feature of the wall space at the end of the Pavilion, attracting much attention and interest from visitors, and conferring great credit upon the enterprising firm who made the display.

GEORGE CUMMING & SON, 18 Fell St.—Portable Forges, Blowers and Machinery.

The display of forges by this enterprising firm were well made and of a very good design. They form the basis of a great manufacturing industry, which is not only a credit to the Coast, but shows how specialized modern methods of manufacture have become. The display of forges' and blowers' appliances was varied and interesting. This firm ship their goods to all parts of the world. They were among the enterprising Californian firms who exhibited at the Columbian World's Fair at Chicago.

WASHBURN-MOEN MANUFACTURING Co.—Nailmaking Machinery.

This important firm, who have recently joined the ranks of home manufacturers, made two of the most attractive and interesting exhibits in the past Fair. The one at present under consideration was located in Machinery Hall, and consisted of two wire nail making machines. These machines illustrated to perfection how almost human in their apparent intelligence machines can be made. A roll of wire of the correct size being properly adjusted to the machine is drawn length by length with precision, cut to the required length, sharpened at the point, and the head by one blow raised up at the other end with a rapidity and accuracy which was fascinating to watch. One hundred and eight nails per minute were made by this machine day after day without flaw or intermission; the machines themselves seemed to take an almost human delight in their work, but unlike the human worker seemed never to grow weary in well doing.

CLASS 4.

Wood Working Machinery.

PACIFIC SAW M'FG. Co.—Saws.

The magnificent assortment of saws and cutting tools displayed by this firm formed a truly spectacular exhibit at the end of the Pavilion forming a brilliant and striking background which lit up the whole upper end of the building. Gigantic lumber saws down to the smallest and finest toothed metal saws were arranged in ornamental groups, the whole forming a beautiful display.

N. W. SPAULDING SAW Co., 17 Fremont St.—Saws.

The display of this exhibitor was composed largely of saw bits and other details of saw construction and manufacture, and formed an extremely interesting exhibit.

CLASS 5.

Miscellaneous Machinery.

SUPERIOR WINDMILL Co.—The display of mills in this exhibit was large and attractive and showed many points of superiority.

MULTI MOTOR Co.—The Windmills displayed by this firm are of a remarkable character, and caused much comment and inquiry. They appeared to display a paradox in the line of windmills and wind motors, one wind wheel being placed in direct line of the air current, behind another of similar character, both being geared to a central vertical shaft, with apparently a great gain in power and economy. The scientific principles upon which this device is based does not seem to be clearly understood, and its peculiarities are, to say the least of it, very astonishing and would repay investigation.

PACIFIC STATES TYPE FOUNDRY.—This firm artistically displayed the Williams Typewriter, a somewhat new aspirant for public favor. It showed many features highly desirable in this class of labor saving devices, noticeably the peculiarity of displaying the printing in plain sight as the operator writes on it. This undoubtedly is a feature of great importance. Many of the details of its construction display great ingenuity and success, and the work which was shown on the machine during the Fair makes it appear likely that this machine will ere long take its place as a favorite if it has not already assumed that position.

SAN FRANCISCO AUTOGRAPHIC REGISTER Co.—Autographic Registers.

The exhibit by this firm was of the most interesting character. It consisted of the Autographic Registers of this Company, and also the continuous roll printing presses which print and prepare the paper used in the Register. This device is an important convenience in all commercial business where many sales and commercial transactions are made daily, giving as it does triplicate records of each transaction, one of which goes to the purchaser, the second to the accountant, and the third remaining in the Register as a check upon the daily transactions. A promising future seems to be before this device.

SCOTT & BANNAN.—Barlock Typewriters.

This extremely ingenious and beautiful machine is of the exposed writing type of machine, and, as is indicated by its name, the type bars are locked in position while operating by suitable mechanisms whereby perfect alignment is attained under all circumstances. It contains features which no other typewriter has for a variety of work, which make it a worthy competitor to machines of world-wide repu-

tation. Some features which it displays are extremely curious, as, for instance, the drawing of vertical and horizontal continuous lines, also the column and other accountant work. It is extremely small and of great artistic beauty.

L. PETERSEN.—Models.

Models of many important engineering constructions were displayed in this exhibit. Notable among these were working models of the gigantic canal digging machine used by the San Francisco Bridge Company in digging the Colusa County Irrigating Ditch. This ditch, we understand, is one of the largest engineering works in the line of irrigation on this Coast, being 100 feet in its greatest width and 80 feet at the bottom, carrying 10 feet of water. This model shows to perfection all the details of construction in this ponderous machine, the enormous size of which will be appreciated when it is stated that the machine spanned the whole canal, traveling upon tracks on both banks, and digging as it progressed the whole width of the canal to its complete depth. A model of another great and powerful dredging machine was also exhibited. Besides these there were on exhibition models of various motor devices, road engines, electrical appliances, and many other interesting and intricate machines. Mr. Petersen, the maker of these models, has probably made 75 per cent of models of any importance which have been made on this Coast during the past ten or fifteen years, both for patent offices and those employed in law suits.

MERCHANTS' ASSOCIATION.—Street Paving Materials and Machinery.

This important association made a combined exhibit embracing the work and samples from many firms in the line of road making and construction. Many samples of road construction were shown, including concrete, basalt and bitumen, with various methods and details of their use, also showing samples of the materials used in construction of different methods of road making. At this time when good roads are of so vital and pressing a subject of consideration, it is little wonder that the exhibit of the Merchants' Association attracted a continuous crowd of interested spectators. Such exhibits as this are of the highest importance, and we hope that in future exhibits much larger and diversified in the same line will be seen.

OSCAR LEVY.—Whitely Exerciser.

Physical culture is a subject which is always interesting and of importance, and any device which will tend to the improvement and building up of the physique of the rising generation must be of general interest. The device exhibited in this display appeared to fulfill all the requirements of the best and most scientific methods of calisthenics.

M. O'BRIEN, 511 Mission St.--Flour Mill Machinery.

The display of machinery in this exhibit was of a most interesting and instructive character, and the manner in which the exhibit was arranged attracted more than ordinary attention. The spiral conveyers carrying an apparently endless quantity of wheat up inclines only to return, passing it through cleaning machines and devices, thus illustrating the practical workings of flour mill machinery, made this exhibit not only instructive, but of great practical importance, and will doubtless redound to the benefit of the enterprising firm making this interesting display.

WM. MCANSLAN.—Nickel-in-the-Slot Machines.

PACIFIC IDENTIFICATION Co.—Identification Badges.

T. W. RYAN, 440 Fulton St.—Weighing Machines.

A weighing machine comprised the stock in trade of this privilege holder, his use of which was not interesting but unique. A legend printed on a card informed the curious that their weight could be ascertained free of charge providing that prior to weighing the exhibitor failed to guess the weight of the visitor within an error of five pounds, in which case the weighing was granted, but in the event of the guess being within the prescribed limit of error, then a charge of five cents was exacted. It is astonishing to note to what a degree the senses can be cultivated in any particular direction, it being a rare occurrence that the limit was overstepped or a nickel failed to be collected. Crowds of amused and interested spectators could always be found around this exhibit.

JOSEPH A. MAGUIRE.—Punching Machine.

This machine is not a ponderous machine which irresistibly pierces holes through inches of refractory metal, nor is it a device for stamping ornamental shapes from plates of softer material. This machine itself is the article punched. For the privilege of punching visitors were expected to drop a metallic disk of metal, bearing on one side an ornamental shield, and upon the obverse the legend "U. S. of America, 5 cents," the object of the device being to determine how near the puncher could come to delivering a blow capable of putting to sleep such prominent punch stoppers as Professors Corbett and Fitzsimmons.

CLASS 6.

Mining Machinery and Appliances.

MIDAS GOLD SAVING MACHINERY Co.—Gold Saving Machinery.

Among gold-saving appliances exhibited, none attracted more attention than the machine displayed by this enterprising firm. A

simple looking cylinder, hung at a slight incline from the horizontal and revolving slowly in its bearings, was the center of an almost constant throng of visitors, discussing its merits from the practical standpoint of long years' experience with all sorts of devices for the same purpose. The pulp or sand carrying gold is passed through this cylinder, whereby every particle is brought repeatedly into contact with the interior amalgamating surface, which is so constructed that scouring is entirely avoided, and the claim of its manufacturers that no gold escapes has been pretty well substantiated. The machine has been subjected to repeated tests during the past year with all sorts of ore and beach sand from all sorts of places, and in all instances it has come through triumphant, saving a high percentage on the assay values.

L. RADOVICH.—Rock Breaker.

The rock breaker displayed in this exhibit was of the reciprocating jaw type, and seemed to be a well designed and powerful device for the purpose intended, namely, of crushing to a fine degree samples of ore for assay purposes.

E. G. DENNISTON.—Silver Plated Mining Plates.

The products of Mr. Denniston are so well and favorably known that anything which could be said here would be almost superfluous. The mining plates on exhibition were of the usual high class workmanship and some were of exceedingly large size.

MCGLEW ORE CONCENTRATOR Co.—Ore Concentrator.

This device is for concentrating crushed rock in bodies, and has the latest ideas and improvements, and is an extremely well built machine. Its design shows thoughtful consideration.

GEORGE JOHNSTON.—The Johnson Concentrator and Bryan Rolling Quartz Mill.

This Concentrator is the invention of George Johnston, who was the inventor of the first revolving belt Concentrator "with raised edges and a shaking or rocking motion from side to side." Patented July 9, 1867, to George Johnston and E. G. Smith, and by them sold to Mr. Frue, and now known as the Frue Vanner. It overcomes all the difficulties and objections to the horizontal side shake machines which pile the sand on the sides of the belt, or to the motion of the rocker, which throws the material to the center of the belt. Our new machine has an iron frame and shaking table, and is manufactured with the greatest care. The belt frame is suspended from four non-parallel hangers placed in a frame, and by regulating their angle the oscillation necessary to keep the sides of the belt from being overloaded with sands is obtained, while the oscillation is not sufficient to overload the belt in the center, as the case with the rocker. The re-

sult of this motion is a perfect concentrating surface the entire width of the belt. Small rollers, at an angle of about 60 degrees, stand on a slotted base, screwed to the top of the belt frame, keeping up the sides of the belt to prevent overflow. If the belt shifts to either side it can be followed up by these rollers and answers all the purposes of moulded edges, which are expensive and short-lived. The pulp box discharges the pulp in narrow channels ten inches apart in the direction of the belt's travel, leaving space on the belt where the sulphurets can remain undisturbed by the fall of water or sand, and pass up to the clear water at the head of the belt; the sand at the same time passing down unobstructed. This machine requires very little attention and is easily regulated.

The four foot sectional Bryan Quartz Mill, on exhibition, is made in sections not exceeding three hundred pounds for the convenience of packing where there are no roads. The mortar is cut up into sections with planed faces so that it can all be bolted together at its destination. The tires are in two pieces, being made of rolled steel, and are shrunk on the hubs, which are turned. The dies are cast steel, in sections. The mill is driven by a pinion and spur wheel. The yoke carrying the wheels are held in place by a ball and socket joint, and slips down the center post as the tires and dies wear. The tires of this size mill weigh 1,380 pounds, the dies 992 pounds, and will crush from 1,500 to 2,000 tons before worn out. This mill weighs 13,000 pounds; is run at sixty revolutions per minute, and has a crushing capacity of 12 to 20 tons per twenty-four hours. These mills require very little attention, oiling and new screens being all that is required until the tires and dies wear out. Parties using them in Mexico say the peons have no trouble in running them.

JOSHUA HENDY.—The Joshua Hendy Machine Works, 38 to 44 Fremont St.

Good taste was displayed in the arrangement of their somewhat utilitarian and prosaic exhibit of machinery adapted only for quartz and hydraulic mining and milling uses, not ordinarily attractive to the eyes of the general public or those who attend fairs, bazaars or expositions simply to see and to be seen, yet this exhibit from the opening day drew to it not only the attention of men interested in mining and milling enterprises, but all of the patrons of the Exposition, both old and young. The allotted space was enclosed by a neat iron fence surmounted at the four corners and at each side of the two entrances by iron posts on which were emblazoned the pregnant words, "Home Industry," and it is worthy of note and a matter of pride with the officers of these works, that every article placed on exhibition there was built under their supervision at their foundry and machine shops, corners of Kearny, Bay and Francisco streets, this city, and, so far as possible, entirely of California material.

Following are enumerated some of the more noticeable exhibits:

A display of car wheels cast at their foundry and well turned and finished. There were also exhibited an assortment of light and finely finished castings from the size of small paper weights to ventilation plates or openings, fancy urns or vases for growing plants. There were also exhibited cams, tappets, shoes and dies for battery use of steel and chilled iron. Amalgam retorts of varied sizes (small and large) with and without condensing pipes, and many other necessary appliances, fittings and accessories of every well appointed and up to date quartz mill. In the department of mining machinery there were The Davis "Sensible" Horse Whim, set up in position as when placed for practical use. This form of whim, it will of course be understood, is for the use of prospectors and the development of mines in the primary stages of opening work.

In the department of quartz milling machinery, to which they have given special attention during the last twenty-five and more years, were exhibited the following from their many specialties, namely:

"Hercules" Ore and Rock Breaker, designed from, but much improved upon, the old Blake form. Mortar for a Battery of Five Stamps, of the latest approved dimensions and style, a noteworthy exemplification of a perfect piece of casting. The Hendy Improved "Triumph" Ore Concentrator, so arranged as to be set in motion by the touch of an electric button. The Hendy Improved "Challenge" Ore Feeder. Ore and Rock Cars, having an end or side dump, of different dimensions and capacities, built of iron or steel with lined bottoms. Ore, Rock and Water Buckets, of good form and substantial build. Double Jointed Hydraulic Giants, with nozzles and deflectors, which combine elegance of design with a perfect apportionment of weight and strength of iron to secure durability, of different sizes, as well as their peculiar form of water gates.

A. S. HALLIDIE.—Large Working Model of the Hallidie System of Ropeway Transportation.

This exhibit by the well known inventor and President of the Institute is well known over the entire Pacific Coast, where many are in successful operation in the transportation of ores, fuel and other material over mountains and rugged country, and the moving of sand, gravel, rock, earth, etc., for the construction of dams, levees or embankments.

In operation it is sure, safe and economical and is strictly a California invention and manufacture.

J. M. KENNEDY.—Placer Amalgamator.

This device appears to be well constructed and adapted for the purpose for which it is intended.

GEO. M. SALSURY.—Gold Separator.

This machine separates gold from wet or dry sands, gravel or dirt without the aid of water or quicksilver. The dirt is shoveled into a hopper that feeds a revolving cylinder 20 inches in diameter and 5 feet long that contains 210 teeth 3 inches long running in spiral rows from one end of the cylinder to the other, which teeth pulverize the dirt, and carry it out at the opposite end from where it enters. This revolving cylinder is enclosed in another cylinder with a space of 3 inches all around between them. The outside or stationary cylinder has a small fire box, size 2 feet by 2 feet, at the end of the cylinder where gravel enters, and the inside cylinder revolves in heat, the fire passing all around it and also entering the end of the revolving cylinder, thoroughly drying the gravel and dirt, also breaking it fine and shaking all the gold loose and free from it, so that when it passes from the cylinder into a coarse screen, the coarse gravel is carried off, and the fine dust and gold go through and pass over a very fine brass screen with small riffles 4 inches apart. This screen has a wind blast attached which carries off the dirt and dust, and leaves the gold all behind the small riffles. The first two riffles nearly always catch all the gold.

B. J. CURMAN.—The Rae Perfection Amalgamator.

The Rae Perfection Amalgamator, for saving free gold, depends on scientific principles for the accomplishment of the object sought. Briefly, it is a cone within a cone. The outer cone is about seventeen inches in height and about fifteen inches in its greatest diameter, while the inner cone is about thirteen inches in height and about eleven inches in its greatest diameter. When in use these cones are inverted.

The material to be treated is introduced through a pipe into the smaller end of the outer cone under sufficient water pressure to force the sand and light material up through and over the top of the inverted cone. The smaller cone is inverted and immersed into the larger. The cones are separated by a series of plates suspended between them. The object of the inner cone is to confine the water and pulp in a smaller space, bring it into closer contact with the amalgamating plates and to furnish a greater area of amalgamating surface. The entire machine is constructed of silver plates, and when properly dressed with mercury is in condition to arrest any free gold which may be brought in contact with any part of it.

By the action of the water each particle of the sand is separated from each other particle and the gold is left free to come in contact with the plates and sides of the cones or to fall to the bottom of the machine and remain there by its own specific gravity. Rusty gold which refuses to amalgamate may be saved by this process, care being

taken to use only sufficient water to carry the light material over. Especial attention has been given to the construction of this amalgamator in reference to facility in cleaning up, and also in regard to examination when in operation, it is therefore easily and quickly taken apart and put together without stopping the flow of pulp. The overflow from this machine is adapted to act as a distributor for concentrating purposes.

CLASS 7.

Laundry Machinery.

B. E. HENRIKSEN.—Hill's Champion Clothes Dryer.

The distinguishing features of this device are its simplicity of action as well as construction; its compactness when open as well as closed; the ease with which it can be put up and taken down, and finally, the number of uses to which it may be applied. When set up in a yard or garden, all the clothes can be hung up and taken down from one position. The space required is comparatively small, considering the large amount of washing that can be hung up at one time. The revolving feature is one of the most important, inasmuch as every piece is thereby duly exposed to the air and sun, and made to dry in very short time, the slightest wind causing the dryer to rotate. In case of wet weather, the dryers can be set up in an attic, basement or covered porch by simply affixing four brackets to the floor.

T. A. SALE.—Washing Machine.

This exhibitor displayed a machine for the purpose of washing clothes either in household or laundry. This simple and effective device demonstrated how, by means of the simplest mechanism, laborious operations are made easy to manipulate.

THOS. N. FURLONG.—Laundry Trays.

Furlong's Improved Cement Laundry Trays are manufactured from the best Alsen's Portland Cement and Red Top Gravel, and finished with a metal rim on top with improved round corners both inside and outside. This method greatly adds to the strength and general finish. These trays are cast in moulds under a pressure and wired throughout.

J. HOLLER.—Washing Machine.

The washing machine displayed by this exhibitor was an extremely interesting and ingenious device which imitates to perfection the actual operation performed by the old-time washerwoman when she performed upon the "Laundry piano." The ingenuity displayed in this little device is remarkable. By the simplest form of mechanical

devices the water is at intervals thrown over the clothes during the process of washing, whereby the soiled water is removed and replaced by clean. The machine consists essentially of a corrugated roller. This swinging roller is rolled on top of the clothes in an ordinary wash boiler, and between the two, in conjunction with the intermitting deluge of washing water, the clothes, in a very short time and with extremely little manual labor, are thoroughly cleansed.

CLASS 8.

Fire Apparatus and Appliances.

JOSEPH PERKINS.—Hose Reel.

This exhibit consisted of a number of well made hose reels, and attracted a great deal of attention.

B. E. HENRIKSEN.—Adjustable Hose Bridge.

This invention is to supply a well known want that is the usual accompaniment of fires in cities or large towns where street car tracks are crossed by fire hose during a conflagration. An insignificant fire, or even an alarm, will often tie up for a time a large number of cars, greatly inconveniencing the public and causing great loss to the companies, which can apparently be avoided by the use of Mr. Henriksen's device, consisting of adjustable uprights to be placed each side of a car track and of sufficient height to hold the hose above the cars, thereby at any time causing only a temporary stoppage of traffic.

CLASS 9.

Marine.

WATTS & TROTT.—Pleasure Rowing Boats.

This exhibit was a very creditable piece of workmanship. The lines of the boat are especially designed for safety, comfort and easy rowing. One of the boats displayed was 18 feet long, 46 inch beam, built of imported cedar, best white oak ribs, copper fastened throughout, finished in mahogany with polished brass fittings, and the firm's own pattern of rowlocks, and handsomely upholstered with pebble leather cushions, carpet and rugs to match. The same was sold to Mr. J. L. Flood, one of San Francisco's millionaires.

They also displayed another boat 17 feet long, 44 inch beam, and of the same graceful lines. This was one of the firm's ordinary finish imported cedar planking and copper fastened, polished brass fittings,

two rowing seats and seats in ends. Both boats are fitted with two pairs of oars made by the firm of imported white spruce. The display reflected great credit upon the enterprising firm.

JOHN FLORA.—Models of Men-of-War.

The models displayed in this exhibit were of an extremely interesting and fascinating nature. Models of all descriptions of nautical craft were exhibited, from the ocean racer to the pleasure yacht. Their construction and rigging were carried out carefully to the minutest detail.

GEO. W. KNEASS.—Boats and Boat Building.

This well known boat builder had on exhibition a number of sail boats in all stages of construction, and during the Fair the process of building same was proceeded with in this exhibit, forming an extremely interesting display.

CLASS 10.

Sewing Machines, Knitting Machines, Braiding Machines, and Looms.

TURKISH RUG Co.—Oriental Art Goods.

The Oriental goods displayed by this firm were of the most luxurious and costly character. This exhibit was in the form of a Turkish kiosk, and many valuable specimens of Oriental work were on exhibition.

CARLSON-CURRIER Co.—Silk Exhibit.

In the Polk street gallery of the Pavilion was located this beautiful and interesting display of silk, and the process of its reduction to commercial form. The nimble-fingered girls reeled and balled the silk on the spools with a rapidity and accuracy which was most interesting to the onlooker. Machines of delicate and intrinsic form operating at high speed under the guidance of skilled operators carried the silk and silk threads through the various processes to the finished articles. An interested crowd of spectators could always be found around this exhibit watching these beautiful manipulations.

WHEELER & WILSON M'FG. Co.—Wheeler and Wilson Sewing Machines.

The well known Wheeler and Wilson Sewing Machines were displayed by this exhibitor. Operators displayed their capabilities in a great variety of beautiful and interesting ways, such as embroidering, and many kinds of plain and fancy sewing.

WM. HILTON.—Silk Weaving.

Two beautiful power Jacquard looms weaving silk in many artistic elaborate designs formed this most attractive exhibit. California is

so thoroughly adapted for the silk industry, that it is surprising to note that these two looms are the only two on the Coast. They consequently were objects of the greatest interest to all exhibitors, and it is to be hoped that their exhibition at this time may have the effect of encouraging the rapid increase of this beautiful industry on the Coast.

Mrs. B. SHOTWELL.—Needle Threader.

This simple little device is to facilitate the threading of needles, and will doubtless prove a boon to bachelors or those whose eyesight is not of the best.

CLASS 11.

Agricultural Machinery.

BAKER & HAMILTON.—Creamery Plant.

This elaborate and beautiful exhibit of creamery machinery comprised all the various machines of modern contrivance which go to make up the creamery outfit. A large number of centrifugal creamery separators were displayed in active operation on hundreds and hundreds of gallons of milk nightly. These remarkable machines were of different characters, some being driven by belts, others by direct steam impact upon turbine wheels concentrically attached to the main spindle of the separator bowl. The speed of these machines is enormous, varying from 4,000 to 8,000 revolutions per minute, those of the higher speed being the direct steam driven variety. Churns and cheese machines in large variety were also displayed in this exhibit in active operation, the whole forming a bewildering aggregation of belts, pulleys, churns, etc.

BAKER & HAMILTON.—Agricultural Implements, Etc.

When one thinks of the farmer he naturally pictures to himself a rough, labor-bowed and slow-witted individual. This mental picture must be modified, if not entirely changed, by walking through the display of agricultural implements in Baker & Hamilton's exhibit. When one sees the reapers, the harvesters, the threshers, the hillside and ordinary ploughs, both gang and single, the rakes, the cultivators and pulverizers, the potato diggers, trench farmers, and a thousand and one other beautiful and artistic machines, one's old concept of the farmer must be forever discarded, and its place must be substituted by a man of high intelligence, and who possesses a large capacity for absorbing and utilizing the improvements made by the designer, inventor and mechanic, and constructed by the manufacturer and builder. All these and many more were displayed with

great effect in Baker & Hamilton's exhibit. The Coast has reason to be proud of this display of home industry.

F. STENKE.—Pruning Shears and Fruit Picker.

Day after day, with remarkable assiduity, Mr. Stenke stood with one of his picking and pruning devices and lopped imaginary fruit from the braces which sustained the gallery of the Pavilion. Baskets of imaginary luscious fruit passed through the canvas tube which connected the operating shears on the end of the 10 foot pole with the basket located upon the ground. If the apparent ease with which Mr. Stenke operated upon the imaginary fruit suspended from the Pavilion beams, is a criterion, this device will undoubtedly prove a large labor saving invention in our orchards and fruit ranches.

G. G. WICKSON & Co.—Modern Creamery Machinery.

This large and remarkably comprehensive display was of the latest and most approved construction, finely finished and artistically arranged. While not in actual operation, it was in constant motion, and the obliging exhibitor spared no pains in explaining its advantages to those specially interested in the milk industry, and visitors generally.

CLASS 12.

Iron, Steel and Lead.

SELBY SMELTING & LEAD WORKS.—Lead Pipes, Etc.

Visitors examining this extensive exhibit must have been struck with the great variety of purposes to which this metal is put. Lead pipes, lead sheets, lead shot, lead bars, these and hundreds of other forms were displayed in this exhibit.

ALBERT DRAEGER.—Hand Made Horse Shoes.

In this exhibit were shown a great variety of hand-made horse shoes, which were displayed in a beautiful manner showing the great manual skill and workmanship of the exhibitor. All varieties of shoes for rectifying the imperfections in gaits of horses, were exhibited, the whole being a display conferring great credit upon the enterprising exhibitor.

COPPETIERS & MOKEL.—Iron and Brass Work.

This exhibit, like the last, was a display of manual skill metals, but although the materials used were practically the same, the results were altogether different, owing to the fundamental difference of the controlling idea. The object in view in the previous exhibit being entirely utilitarian, in this one, on the contrary, art was predominant.

Flowers and designs in arabesque for decorative purposes hammered from sheet metal, formed a great proportion in the exhibit of Cop-petiers & Mokel. One piece of work was particularly notable, namely, a complete bouquet of flowers entirely in sheet metal. The petals and anthers, the calix and leaves, all beautifully and artistically worked, the result being so beautiful that the refractoriness of the material employed was entirely lost sight of.

This firm is at present busily engaged on large contracts on the interior decoration of several large buildings now in course of erection.

WASHBURN-MOEN MANUFACTURING Co.--Wire Rope and Wire Work.

The most impressive and interesting exhibit on first entering the Pavilion was undoubtedly that of the Washburn-Moen Manufacturing Co. The artistic manner in which the materials were displayed conferred great credit upon the enterprising firm. Wire ropes of enormous diameter were formed into towering arches of artistic design. Small ropes and other wire made materials formed embellishments and artistic finish to the structure. Upon a large wooden plaque or ornamental shape were arranged wire ropes of all sizes together with knots of every known form, except the hymeneal. Ropes in great variety, both round and flat, for all purposes and every conceivable form of wire work were displayed, as also a beautiful model of the "Hallidie Wire Rope Way," of which a description will be found in another part of this volume. This exhibit occupied a space on the main floor 45x20 feet.

ALUMINUM NOVELTY Co.--Aluminum Goods.

A wonderful variety of domestic articles formed of this remarkable metal, and displayed in this exhibit, showed conclusively how rapidly it is finding its adaptabilities. In every case where acid is used its non-corrosive qualities render it extremely desirable, and its lightness adds another quality which in many instances make it extremely valuable.

JOSHUA HENDY MACHINE WORKS.—Iron and Steel Castings, Etc.
(See Class 6).

M. C. BARKER.—Sheet Metal Work.

This display was one of the most interesting exhibits in the manufacturing class. Punching, shearing and sheet spinning lathes and hammering blocks formed a complete operating sheet metal workshop, on no inconsiderable scale either. Lamp fixtures and many other forms of sheet metal work were daily turned out from this busy corner. Among many other articles produced here, was the complete manufacture of saltsellers. This article was made on a large scale in

all its details of punching, stamping, spinning, electro-plating, buffing, polishing and finishing, in all respects and in the same manner and under the same conditions as these various operations would be performed in the actual shop. Crowds of young people haunted this interesting exhibit, many doubtless receiving their first impression of how the ordinary devices of every day use come into existence, many youths, probably, discovering for the first time the bent of their own inclination towards mechanical pursuits. Great credit is due Mr. Barker for this interesting and educational exhibit.

CLASS 13.

Cooking, Heating and Ventilating.

JA GRAHAM.—Stoves and Ranges.

This exhibit of home industry showed conclusively that in the line of fine casting and stove work, the Pacific Coast is on a par with our Eastern competitors, and that for beauty of design and perfection of workmanship, we need ask odds of no other locality. The stoves and ranges in this exhibit displayed a thorough appreciation of the needs and requirements of the modern cooking stove, and the ingenious methods for utilizing space, economizing fuel and giving the greatest capabilities to the stove itself indicated a high degree of designing skill on the part of the manufacturers

CHAS BROWN & SON.—Household Utensils, Etc.

One of the most striking exhibits which met the eye of the visitor immediately on his arrival in the gallery of the Grove street side of the Pavilion was the one at present under consideration, which comprised a large variety of household appliances, which come under the category of hardware. The two main features of the exhibit were stoves and filters. Stoves of all kinds and profusion to suit all classes and requirements were displayed in this exhibit.

STEIGER & KERR.—California Made Stoves and Ranges.

On the main floor of the Grove street side of the Pavilion, almost the first exhibit to attract the attention of the incoming visitor was that of an artistic booth, in which stoves made by the well known local firm of Steiger & Kerr were most artistically displayed. The castings in these stoves were extremely smooth, appearing almost as though they had been ground to a surface. The joints were all well trued, close and regular, and the general appearance and design was of the highest excellence. The arrangement of the interior of these stoves and ranges is such as to leave little or nothing to be desired on the score of convenience and economy.

OAKLAND STOVE WORKS.—Stoves and Hardware.

This exhibit, though not so large as some of the other exhibits in the same line, was so artistically arranged and displayed its various manufactures so appropriately that one was almost tempted to feel that the exhibitor had used the best possible judgment in stopping short of bewildering profusion. A neat and artistic fireplace, with a mantel and other fittings, formed a suitable background displaying appropriately their form of fire grate. The stoves built by this firm at their Oakland foundry do not fall short of the promise which the artistic management of this exhibit seems to suggest. Both in workmanship, style and finish these stoves more than favorably compare with those of Eastern manufacture.

WM. CRONAN.—Heater and Ventilator.

Few of the best houses of modern construction are not provided with devices for heating other than the ordinary stoves or fire places in various rooms. The heating device under consideration, is for use in the hot air method. The object the maker has in view and which he has carried out carefully and thoroughly in the present furnace, is economy of fuel and efficiency in generating the great and constant supply of equitably heated air.

A. QUADE.—Coffee Pot.

This well known purveyor of groceries and delicacies has in this exhibit given prominence to an exceptionally good device in the line of household utensils, which probably, more than any other, has been the subject of invention and study, namely, the device under consideration. Its benefit arises from the extremely simple though efficient manner in which the necessities of the case have been carried out.

SAN FRANCISCO GAS LIGHT Co.—Gas Stoves and Appliances.

This magnificent display consisted of stoves, ranges and other gas cooking and heating appliances in great variety, and showed to what perfection the use of the ordinary lighting gas has been used for the purposes of household and kitchen use. Above the exhibit was arranged in ornamental form several hundred Welsbach burners which, by their clear brilliant light, gave a charming fairy-like appearance to the exhibit.

 CLASS 14.

Hardware, Cutlery and Fire Arms.

[No Exhibits in this Class.]

CLASS 15.

Fire and Burglar Proof Safes and Locks.

JOHN HERMAN.—Fire and Burglar Proof Safe.

The magnificent fire and burglar proof safe of California manufacture which this exhibitor displayed was a marvel of workmanship in its line. Its size was 12x7 feet.

JOSEPH A. WILSON.—Burglar Alarm.

This remarkable little contrivance is for the purpose of attaching to a door or window with the object of giving alarm should it be opened by others than those who have the right of entry. It is so constructed that when the window is raised a trigger is released which strikes a percussion cartridge and makes an explosion similar to that of a small sized cannon, so that even though the unwelcome intruder be not seriously injured, he is very apt to be scared to the point of death.

CLASS 16.

Brass Work, Plumbers' Goods, Lamps, Fixtures, Etc.

RAPID SAFETY FILTER Co.—Water Filter.

A large number of filters for various purposes, from the smallest adapted to household purposes to that for use by the magnificent caravansaries were displayed in this exhibit, all arranged to an eye of artistic taste. This filter is so well known and extensively used on this Coast that a lengthy description would be useless.

J. C. AMELUNG.—Wine Filter.

The wine filter displayed by this exhibitor was known as the "Loew Filter." It requires skill and some qualification to properly pack and operate one of the old style wine filters. It is claimed that a child of ordinary intelligence can operate it with assured success, owing to its simpleness of construction. Its advantages are centered in the large filtering surface, and the comparatively small quantity of filtering material used, and also in the facility for opening the apparatus in order to cleanse it with despatch. The operation of draining the liquid in the filter, and repacking with fresh filtering medium, occupying but a few minutes.

CALKINS OIL BURNER Co.—Oil Burner.

This device was exhibited with the display of Steiger & Kerr. It appeared to be of good design and adapted to the purpose for which it was constructed.

J. J. CRAZE.—Water Filter.

HUGH KELLEY.—Beer Cooler.

W. W. WESTOVER.—Water Filter.

This really ingenious device consisted of an arrangement mechanical in form whereby at each drawing of water from the filter it automatically cleansed itself of the dirt and refuse filtered from the water. The general arrangement of this exhibit was of the most striking and artistic character, being composed of a rustic frame work of redwood boughs and branches enclosing a rocky background in which were placed ferns and ornamental grasses, the whole forming an artistic arrangement extremely appropriate to the display of pure water.

ALBERT GRAFF.—Lamps, Etc.

The lamp burner exhibited by this manufacturer is so well known as to require but very little explanation. The essential feature of this burner consists of a series of small circular wicks arranged in a circular form, by which means economy of oil is secured and increased brilliancy of illumination. The exhibit was arranged in a very attractive and ornamental form.

UNIVERSAL GAS SAVING ASSOCIATION.—Gas Regulators.

The device exhibited by this well known firm is for the purpose of so regulating the pressure of gas, that, though there be varying pressures on the mains, the pressure at the tip remains practically constant, so that an even, steady flame and perfect combustion results with manifest economy to the consumer.

P. E. BARKER.—Metal Spinning, Stamping, Etc. (See Class 12.)

CLEVELAND FAUCET Co.—Beer Pump, Etc.

Bar fixtures and other paraphernalia pertaining thereto comprised this exhibit which, with the extremely costly and beautiful sideboard and the artistic arrangement of the whole exhibit, made one of the most attractive displays on the main floor.

JOHN J. COFFEY.—Water Filter.

The filter exhibited in this display was of that character of filter applied to household faucets. It was of neat and ornamental design.

PASTEUR FILTER Co.—Water Filter.

This filter, which in many forms formed so striking a feature of this exhibit, was of the variety known as the "Pasteur Germ Proof Filter." This filter consists essentially of a hollow cylindrical shell of fire burnt clay of close porous texture, through which water is forced by pressure. The efficiency of this filter was artistically displayed by means of two crystal globes into one of which unfiltered water flowed. The difference in appearance of these receptacles was

indeed striking, and doubtless produced the effect upon the mind of the visitor intended by the exhibitor.

CLASS 17.

Grates, Mantels, Marbles, Artificial Stone, Earthenware, Glassware, Etc.

R. R. BARTSCH.—Terra Cotta Art Work.

Day by day during the continuance of the Fair, this exhibitor displayed his skill in modeling in clay beautiful and artistic forms, and was the center of an admiring group of visitors during the whole time of his work.

INYO MARBLE Co.—Fancy California Marble.

The display of marble by this firm was striking and interesting in the extreme and displayed one of the remarkable natural products of our favored State.

IMPROVED ASPHALT PIPE Co.—Asphalt Pipe.

The pipe displayed by this company promises a solution to the problem of cheap irrigating conduits. These pipes are formed of annular segments of board dipped in asphalt liquid and nailed together. We should judge that owing from the fact that they can be made out of refuse lumber and otherwise cheap material, and providing the internal pressure they are expected to bear is not excessive, they would form a cheap and economical method of conveying water.

JONES BROS. & Co.—Finished Monuments and Marble, Etc.

GRANITE AND MARBLE MONUMENTAL WORK.

The exhibit consisted of native, domestic and foreign granite and marble. The State of California was represented by grey colored bases under the monuments, and the samples shown prove that California has a wealth in her granite deposits that would indicate that in time she will be able to supply all her own wants in this direction.

In the domestic group was the very fine Westerly (R. I.) granite, that has no superior in the world. Then next in order came the unapproachable Barre (Vermont) granite, with its fine, even and delicate blending, and free from all imperfections.

The Quincy (Massachusetts) granite monument exhibited, showed a very beautiful dark stone that takes an extremely high polish.

Among the fancy colored granites are the Rose Swede, with its purple and dark red mixture and highly polished; the Scotch "Hill o' Fare," showing a red and black blending and remarkably beautiful.

The next peculiar and odd looking granite was that from Labrador,

being almost black, and on its highly polished surface studded all over with pearls.

The specimens in Italian marble, demonstrated that for quality and workmanship Italy was still ahead of the world.

FRANK A. KIMBALL.—Marble.

Large slabs of remarkably marked marble from San Diego Co. formed this striking exhibit. The coloring and pattern of this marble is so exquisite as to immediately arrest the attention of even the most careless observer. Black shade lines intricately mingled in a bewildering maze upon a rich green background faintly suggests the peculiarity of this valuable stone. We should think that for interior ornamental finish it would find an extremely great demand, its colors being so soft and harmonious.

CLASS 18.

Carpenters, Joiners, Carvers and Stairbuilders' Work, Ornamental Glass Painting, Etc.

H. G. HAMADA.—Model California Cottage Home.

This beautiful model built to scale, displays to perfection the peculiarly Japanese art of miniature. Everything outside and inside of the structure was made in perfect semblance of actual practice, even to the construction of the internal arrangements and carpenter work of house building and the electric light wiring. It was so devised that it could be taken apart in sections for the purpose of displaying its manner of construction, and would doubtless prove of great utility as an object lesson to students of architecture.

A. VERHAGHEN.—Stained Glass.

Located in the Polk street gallery, and placed so as to have the advantage of light from the end windows, this magnificent display of stained and ornamental glass always attracted the attention of visitors.

KENNY & WELLS.—Parquet Floors, Grill Work, Etc.

Close to the main entrance on the lower floor was located this truly interesting exhibit of artistic and ornamental wood work. To those whose artistic tastes outrun the capacities of their pocket book, this exhibit shows a manner in which one of the most satisfying and artistic requirements, a home, ornamental hardwood floors can be had at a cost which would not exceed that of good carpet. The wooden grill work for alcoves and other suitable places was shown in this exhibit in a most artistic manner.

THOMAS C. BUTTERWORTH.—Art Glass.

This exhibitor arranged a magnificent display of all descriptions of artistic stained and other descriptions of ornamental window glass, which both during the day and night by natural and artificial light formed one of the most notable and artistic exhibits in the Fair. It was located in the center of the Larkin street gallery of the Pavilion.

JAS. H. AVER.—Wood Whittling.

Near the Superintendent's office was located a glass case containing specimens of truly remarkable work with a pen knife. Chains, scissors, plyers and many other remarkable and apparently impossible feats in whittling out of the solid wood were here shown. Intricate and artistic designs completely filling small-mouthed glass vessels and many other strange productions of the jack knife were on exhibition, bewildering one as to how such devices could be brought into existence at all, making it plain that a world of patient toil had been expended on these interesting, if not very useful, productions.

A. STRAND.—Inlaid Wood Work.

Many magnificent and beautiful specimens of the inlayer's art were here displayed, and the whole world laid under contribution for various colored woods and metals with which to bring out artistic effects.

MODEL WINDOW HINGE Co.—Patent Window Hinge.

This device for the purpose of facilitating the cleaning of the outside of windows seemed to be simple and efficient.

SURETY WINDOW HINGE Co.—Swinging Window.

A device whereby the outside of windows can be reached without difficulty.

J. M. SLOPER.—Window Hinge.

An attachment to windows whereby the dangerous positions generally assumed for outside cleaning is avoided.

CLASS 19.**Musical Instruments.****HERMAN MULLER.—Stringed Instruments.**

A great variety of beautiful instruments were here displayed, a specialty being violins, of his own design and workmanship, in which he shows great skill in manufacture and finish.

A. BRUENN.—Pianos.

The instruments displayed in this exhibit are a credit to California,

and show to what perfection the piano maker's art has already achieved on this Coast.

KOHLER & CHASE.—Musical Instruments.

Wind, stringed and percussion instruments in endless variety and number were displayed by this important firm, and one would be hard to please who could not, from the assortment here displayed, select an instrument which would best suit his or her particular taste or capability. Even those who have no capability at all for making music could here find those products of the ingenious mechanic which, when wound up, would discourse melody by their own mechanical capabilities without assistance.

ISIDOR VIDAL.—Spanish Fans and Musical Instruments.

G. GALLEAZZI.—Accordions.

For one whose tastes incline to this form of instrument, this exhibit offered an assortment which would not fail to satisfy the most exacting requirements.

STATHAM & Co.—Pianos.

Pianos to suit all requirements were exhibited in most artistic display.

G. O. HEINE & Co.—Pianos of California Manufacture.

Near the center of the Polk street gallery of the Pavilion this firm of local manufacturers displayed the magnificent products of their skill both in the finished and unfinished condition. Some of the pianos displayed in this exhibit were not only marvels of tone and excellence from the musicians' standpoint, but were artistic and beautiful to the ordinary observer, and were works of art which would be ornaments in the music rooms of the most artistic homes.

BENJAMIN CURTAZ & SON.—Pianos and Organs.

The design adopted by this exhibitor for the general arrangement of his display was unique and beautiful in the extreme. It consisted of a large shell-like background artistically decorated and ornamented with numerous incandescent lights. The exhibit of pianos and organs in this booth always attracted a numerous and interested crowd of visitors.

F. W. KRELING & SONS.—Banjos.

Besides the magnificent display of stringed instruments, this exhibit was always made exceptionally attractive by a number of musical artists who, during the intervals between the performance of Scheel's orchestra, played selections upon banjos, guitars and other stringed instruments.

LOUIS MILLER.—Accordions.

Many of the instruments exhibited in this display were truly marvelous specimens of his own workmanship and skill.

CLASS 20.

Vehicles and their Attachments, Children's Carriages, Hobby Horses, Etc.

The exhibit of Bicycles this year was the largest ever made at the Fairs of the Institute and comprised all improvements and styles up to date. Where all were so good, it would be difficult to specially mention any exhibit, and we will only state that the Bicycle Department probably attracted more attention than any other part of the Fair.

GOLDEN GATE BICYCLE Co.—Bicycles.

COLUMBUS BUGGY Co.—Bicycles and Buggies.

ONTARIO CYCLE Co.—Bicycles.

A. D. AYERS.—Bicycles.

GEO. C. SMITH.—Cyclometers.

JOSEPH A. WILSON.—Bicycles.

J. A. SWENARTON.—Bicycles.

G. ROTTANZI.—Bicycles.

WESTERN PREMIER CYCLE Co.—Bicycles.

COOPER CYCLE Co.—Bicycles.

W. B. COOKSON.—Bicycles.

THOS. H. B. VARNEY.—Bicycles.

H. B. SCHINDLER.—Truck.

INDIANA BICYCLE Co.—Bicycles.

F. W. THEISEN & Co.—Delivery Wagon Harness and Horse.

MARCH DAVIS CYCLE Co.—Bicycles.

BAKER & HAMILTON.—Bicycles and Vehicles.

Their vehicles comprised a general display of farm and spring wagons for country use.

J. H. GOVE.—California Hand Grain Truck.

This truck combined several new improvements and claimed to be especially convenient for handling grain.

WM. GALL.—Bicycle Stand.

CLASS 21.

Furniture, Upholstery, Etc.

TRUMAN S. CLARK & SON.—Woven Wire Mattresses and Folding Beds. All of Home Manufacture, Serviceable and Well Arranged.

A. V. HENKO.—Furniture, Etc.

Besides the very artistic arrangement of furniture and hangings, this exhibitor had in his booth an attraction which kept an interested group of both young and old continually surrounding his place. This consisted of a beautiful and elaborately finished and furnished doll house in every particular complete, even to the miniature occupants.

E. H. MARWEDEL.—Brass and Iron Bed Steads.

CHAS. M. PLUM & Co.—Furniture. A Fine and Costly Display of Elaborately Carved and Upholstered Goods.

JOS. FREDERICKS & Co.—Furniture.

A large corner of the Art Gallery was beautifully furnished with high class artistic furniture and drapery by this extensive firm, and formed an attractive exhibit to thousands of visitors who daily passed through the gallery.

MRS. R. G. EUBANK.—Combined Trunk and Bureau.

This exhibitor displayed a trunk containing three drawers, dressing cases, hat boxes and an adjustable mirror which is securely hinged to a semicylindrical box, which places the glass on the top of the bureau when the trunk closes. A piece is clasped over the drawers and fits like the front of any ordinary trunk. When the trunk is closed this front piece is locked in with the lid. The trunk may be manufactured in various sizes and materials, and is the weight of any ordinary trunk of the same size.

CALIFORNIA FURNITURE Co.—Bed Couches.

In this exhibit the manufacturing of this useful article of household furniture was proceeded with daily, forming not only an interesting object lesson, but the best kind of an advertisement for this new article of furniture. This couch consists of a large upholstered box, so that it serves not only for the purpose of a divan or reclining place, but also as a receptacle for ladies' garments, which it is desired shall be kept at full length without folding.

E. D. BRONSON & Co.—Dictionary Holder.

HARMON & PATTERSON.—Springs for Upholstering.

SEAVY & DURAND.—Furniture and Carpets.

PACIFIC FRINGE FACTORY.—Silk Cords and Draperies.

This display was a distinctive home manufacture and in quality and workmanship equal to any imported.

CLASS 22.

Billiard Tables.

CLASS 23.

Woodenware, Brushes, Wire Goods, Willowware, Etc.

BUCHANAN BROS.—Brushes, Feather Dusters, Etc.

The exhibit of this well known firm, though repeated from year to year, never fails to evoke attention. The manufacturing of brushes, though a simple operation, is one of skill and patience. Besides their exhibit of manufacturing, their display was notable for the great variety of articles in their line of manufacture displayed.

FULDA BROS.—Tanks.

This firm manufactures tanks of all sizes for water, wine, etc.

ZAN BROS.—Brooms.

Brooms of California manufacture, well made and of the best material.

HOFFMAN, DAHL & Co.—Ice Box.

DAVID WOERNER.—Cooperage.

In this magnificent display of cooperage were notable examples of the coopers art, namely, two very large and beautifully constructed casks, their heads being artistically carved.

CLASS 24.

Boots, Shoes, Leather Goods, Etc.

L. D. STONE & Co.—Saddles and Cowboy Goods.

In this exhibit were displayed in great profusion highly ornate trappings and furnishings which delight the soul of the cowboy and vaquero of our Southern plains.

P. F. McNULTY.—Handmade Boots and Shoes.

In quality, fit and finish, Mr. McNulty's work is recognized as all that can be desired for foot wear.

SIEBE-GLANVILLE Co.—Shoes and Lasts.

H. MULLER.—Handmade Boots and Shoes.

This exhibit in every respect was most creditable, the articles being

nicely arranged and comprising all varieties of boots and shoes for men, women and children.

NEW YORK BELTING AND PACKING Co.—Rubber Goods.

WM. CROSBIE.—Harness.

H. A. WEGENER.—Saddles and Stamped Leather Work.

In this exhibit Mexicans displayed their skill and art in the production of ornamental leather stamping. Many high ornate samples of their work were produced during the Exposition, eliciting exclamations of surprise and pleasure from the many visitors who crowded around their exhibit.

PLACIDO RIOS.—Leather Work. Highly Ornamental and Exquisitely Done.

CLASS 25.

Hemp, Cordage, Paper, Furs, Silk, Hair, Etc.

PACIFIC STEAM WHALING Co.—Whalebone.

This new and important California industry was beautifully illustrated in all its stages by the magnificent and costly exhibit of this firm.

ALBERT J. GREZ.—Hair Work.

All varieties of art work from hair were produced in this exhibit, forming a very interesting display.

JOSEPH NEUMANN.—California Silk Worms.

Probably one of the most interesting exhibits in the whole Exhibition was this elaborate display of California native silk worms in all stages of their development, from the eggs to their various growths to their final encistment in cocoon form. When silk culture takes its rank among the industries of this State it will owe more to the perseverance, patience and industry of Joseph Neumann than all other causes combined. He it is who has brought to the notice of the world the possibilities of this wild silkworm, claiming that the fiber of the cocoon is stronger than that of the mulberry species, which if so, the State itself should take the matter in hand and extend to him its support and financial backing and thoroughly investigate the matter, and if possible make it one of the great industries of this Coast, which is so well adapted to sericulture.

NEW WOMAN'S CLUB.—Fancy Work, Etc.

In this exhibit were displayed the results of many of the occupations which are now being followed by the so-called "New Woman," including silk work, pottery, painting, etc.

BERWIN & GASSNER.—Sealskin and Fur Garments.

The art of the furrier was most interestingly displayed in this exhibit on a great variety of skins. The sealskin garments and their manufacture particularly attracted the attention of the lady visitors, of whom a throng would always be found around this exhibit.

W. H. MURRAY.—Home Industries.

The exhibit under the management of this gentleman comprised samples of home manufactured articles, including specimens both of the raw and manufactured product of the Ramie plant, showing the large variety of articles into which this material can be manufactured, and also showing its great possibilities and probable future importance in the line of textile fabrics.

CLASS 26.

Woolen Dress Goods, Etc.

GOLDEN GATE WOOLEN M'FG. Co.—Woolen Goods.

The great variety of woolen fabrics displayed in this exhibit show clearly the extent and value of California's resources in this line of industry. The samples on exhibition are undoubtedly the highest and best specimens of woolen fabrics which have ever been exhibited here or elsewhere. Blankets—Fine white, all wool, different sizes and weights, fancy and plain colored and mottled. Flannels—All colors, dotted and honeycombed, also indigo blue blouse flannel, cloth finish. Tweeds—Fancy twills, stripes and checks. Cheviots—Grays, browns, alizaine blue and black. Kerseys—Sky blue army standard and army fine quality. Cloths—Light gray cadet and indigo blue army standard. Beaver—Twenty-eight dozen Police department standard as adopted by the Police Commissioners for the Police Department of San Francisco.

J. SPAULDING & Co.—Carpets Cleaned and Renovated.

F. THOMAS.—Cleaning and Dyeing.

COLUMBIAN WOOLEN MILLS.—Display of Cloth. (See Class 27.)

S. SHEHADI.—Syrian, Turkish and Morocco Goods.

A great variety of magnificent and costly rugs and other fabrics were displayed in this exhibit. Many of these rugs, we are informed, are valued at thousands of dollars each.

CLASS 27.

Gentlemen's Furnishing Goods.

COLUMBIAN WOOLEN MILLS.—Manufacturing of Clothing.

From twenty to thirty operatives worked daily in this exhibit in the production of clothing, and it was interesting to note the rapidity and precision with which they performed the various operations incident to their work.

THE DEIMEL LINEN MESH Co.—Underwear.

This is a new method of producing a fabric in linen. It differs from the ordinary fabric in that the machine which makes it forms the structure of the goods in a mesh as distinguished from ordinary weaving. Many advantages are claimed not only for the material itself, but for the peculiar method of its construction.

NEWBAUER & LEVY.—Renovated Clothing.

M. J. KELLER Co.—Gentlemen's Shirts.

This enterprising firm from across the Bay made one of the most creditable exhibits in the whole Pavilion. It was located on the Polk street gallery, and attracted constantly a large crowd of interested spectators. The exhibit comprised a complete work room with machines and operatives in full operation turning out the regular product. The manufactures of this firm are first-class in every respect, a fact which was well appreciated by visitors.

C. LYONS.—Exhibit of Gentlemen's Clothing.

In a large glass case containing the exhibit of this well known manufacturer were some extremely beautiful examples of the sartorial art, as also a magnificent statue of a golden lion, symbolical of the firm's name, the whole exhibit being a unique and artistic display.

THOMAS E. KENT.—Shirt Manufacturing.

On the Grove street side of the Pavilion, in the gallery, was located this most interesting exhibit, which consisted of a section of a work room with operatives at work following the ordinary routine of shirt manufacturing as it is carried on in the factory. It attracted universal attention from interested visitors.

CHARLES FISHER & Co.—Bicycle Leggings.

The material of this exhibit doubtless fills a long felt want, and the character and design of the leggings manufactured by this firm appear to be well adapted for the purpose for which they are designed.

CLASS 28.

Ladies' Furnishing Goods, Dresses, Cloaks, Millinery, Etc.

MRS. E. D. LAWRENCE.—Method of Dress Cutting.

This exhibitor displayed with great skill her method of shaping and fitting ladies' costumes, and from the complimentary remarks overheard in the vicinity of her exhibit, it is evident that the method which she exhibited met the approval of the lady visitors to the Fair.

MCDOWELL DRAFTING Co.—Drafting Machine.

This exhibit comprised a mechanical means for measuring the human form "divine" and for transferring accurately the measures so obtained to suitable material to form patterns, which, when made into garments, will accurately fit the form from which the measurements were derived. The exhibit attracted universal attention.

D. HAMBURGER & Co.—Corsets.

The display by this firm of these interesting and useful articles were artistically displayed in a glass case and formed a point of attraction for visitors. The workmanship and design was of a very high character.

EATON & EATON.—Dress Cutting System.

Competing for public attention and not unsuccessfully was the system of dress cutting displayed by this firm. In many points it displayed great ingenuity and adaptability to the purposes for which it was intended, and in many directions it appeared to surpass those of its competitors.

GEORGE A. TURNER.—Curling Iron Holder.

The object of the device is to provide an arrangement whereby curling irons used by ladies in their toilet is attached to an ordinary gas jet and so arranged that it can not be smoked by the flame of the gas, thereby overcoming a serious objection to the usual methods of heating such instruments. This device was manufactured complete in the Pavilion.

MADAME HAMILTON.—Drafting Machine.

This device was for the purpose of taking measurements and reproducing them so that dresses made therefrom will fit accurately. It appeared to accomplish the object for which it was designed with commendable precision.

MISS NIXON.—Seamless Dress Waist.

This waist was a remarkable production of the dressmaking art and the object of much attention and comment.

MRS. L. BOLTON.—Millinery.

An interesting display fully appreciated by the ladies.

MRS. HOPKINS.—Millinery.

Art, beauty and design combined to make this exhibit a center of interest to those most vitally concerned in the decrees of fashion which were here displayed in lavish profusion.

P. J. DYER.—Dress Cutting School System.

CLASS 29.

Electricity and Electrical Appliances.

HEALD'S BUSINESS COLLEGE.—Electrical Apparatus, Penwork, Etc.

As usual, at these Fairs of the Institute, this enterprising institution made a display of objects and appliances used in the various departments for the instruction of our young men and women. Of special interest to visitors was their electrical apparatus in voltaic and static electricity, which was fully explained by polite attendants. The small boy was in his glory when some companion or unsophisticated visitor from the country was suddenly "shocked" by the tempting appliances attached to two large static electrical machines.

C. B. LINTON.—Electrical Goods.

N. W. SPALDING.—Gentry Electric Elevator.

This display consisted of a well made model about $\frac{1}{4}$ scale of a new form of electrical elevator. The motor is attached to the lower side of the floor of the elevator, and by means of suitable connecting wires is driven. The spindle of the elevator through a worm gear connection is meshed into gear racks on the guide posts of the elevator shaft. Absolute control and safety seemed to be insured by this method of driving.

D. T. MERSHON & Co.—Telephones.

In an artistically arranged booth located on the Grove street side of the Pavilion, this firm made an interesting display of telephones which attracted much attention.

C. E. FRAZER.—Electrical display.

CLASS 30.

Scientific Apparatus, Etc.

L. KUTTNER & Co.—Optical Goods and Lense Grinding.

This progressive firm made an extremely creditable display not only of optical goods but of the scientific apparatus of the latest and most.

improved character for testing and measuring irregularities of vision. The booth was suitably arranged for the use of these instruments and hundreds of visitors took advantage of the courtesy of the exhibitor.

S. A. MOSES.—Optical Goods.

This exhibit consisted of a large and varied stock of optical goods of the latest and most improved designs.

CLASS 31.

Surgical and Dental Implements and Appliances.

ARTIFICIAL LIMB Co.—Artificial Limbs and Surgical Apparatus.

To those who have the misfortune to lose their limbs this exhibit was of the highest possible interest and importance showing as it did the latest improvements and developments in this particular line of industry. The ingenuity and skill displayed in producing natural movements in the artificial limbs made the display interesting to many others than those directly concerned.

DR. H. G. YOUNG.—Dental Goods and Specimen Work.

This exhibit displayed the advances made in modern dentistry and specimens of work herein shown would compare favorably with the highest type of dental work.

DR. FRANCES TREADWELL.—Dental Work.

The art of dentistry was here displayed in all its ramifications by a lady whose skill and workmanship were highly commended.

A. R. ELLIOTT.—Artificial Limbs.

The skill displayed by the modern artificer in rectifying the deficiencies caused by nature or accident has arisen to so high a pitch of refinement that artificial members are supplied which simulate so nearly the natural limbs that for all practical purposes they take their places and perform their functions. This display exhibited the latest improved devices in the art involved.

CLASS 32.

Gold, Silver Platedware, Watches, Clocks, Jewelry and Bronzes.

O. C. LASSEN.—Electro Plating.

This progressive firm placed in operation an exhibit worthy of the

consideration of other exhibitors. It consisted of a complete electroplating plant in operation, embracing the processes carried on in the factory in the electro plating of gold, silver, copper, brass and other metals.

MISS ANNA WICKHAM.—Stone Jewelry Setting and Caring.

This enterprising lady not only exhibited beautiful specimens of her work, but did a thriving business in her specialty during the continuance of the Fair.

MURRAY MEYERS.—Manufacturing of Rings, Etc.

The interesting process of manufacturing rings from pieces of old gold and silver was carried on by this exhibitor so that visitors to the Exposition could witness the process of manufacture.

M. F. LUCAS.—Engraving on Gold, Etc.

By means of an ingenious electrical device this exhibitor engraved in ornamental character and design various designs and lettering on articles presented to him for this purpose.

WILLIAM ENGES.—Wire Jewelry.

Out of simple plain gold or silver wire this exhibitor produced many beautiful and interesting designs of jewelry for the benefit of those who desired such ornamentations.

M. L. LEVY.—Silver Tankard.

This magnificent sample of the silversmith's art formed a conspicuous and attractive centerpiece on the main floor of the building to the left of the band stand. Not only was it of intrinsic worth, being valued at \$1,500, but its artistic merit was of the highest possible character.

S. SONNENFELD.—Precious Stone Cutting Lapidary.

Seldom have the public an opportunity of seeing in operation the processes of this little known industry whereby the rough and unattractive stone is transferred as by magic to the brilliant sparkling gems which adorn and enhance the attractions and loveliness of fortune's favorites. This exhibitor, day by day, performed the operations of cutting, polishing and setting of jewelry for an admiring throng of interested spectators.

H. FORTRIEDE.—Ivory, Amber, Etc.

On the Hayes street gallery of the Pavilion, just outside of the Art Department, this exhibitor displayed in several large glass cases elaborate and beautiful specimens of the carver's art. Probably no handsomer exhibit of this character has been seen in the Pavilion than the one under consideration.

ADOLPH GREENBAUM.—Electro Engraving.

With the aid of suitable appliances this exhibitor during the con-

tinuance of the Fair produced some very interesting and artistic work in the line of his department of industry.

CLASS 33.

Printing.

M. H. DE YOUNG.--Stereotype Plates, Etc.

With its usual enterprise the "Chronicle" made a most interesting and instructive display illustrating the various stages in the process of producing a great modern daily. The various stages were fully and fitly represented from the crude manuscript of the writer and the drawing of the artist to the finished and completed newspaper as it is turned out by the thousands per hour ready for distribution to its subscribers.

J. F. QUANE.—Sign Stenciling Machine.

This exhibit consisted of sign stenciling machine claimed to be the only machine of its kind in the United States, invented and patented by a Californian. The letters are cut out of a piece of oiled detailed paper. The machine is constructed with an arm which holds the brush, the same revolving 300 times per minute. By guiding the brush over the stencil it makes a clean cut and neat sign, turning them out at the rate of one per minute or 500 a day of eight hours. Any color can be used on the machine and sign of any size is made. An one-eighth horse power will run the machine, and only one man required to guide it.

G. H. TIETJEN.—Brass Zinc and Copper Signs.

The work turned out by this exhibitor during the Fair in his exhibit was notable for its artistic character and high degree of finish. Many of the metal signs made in this exhibit were of a most ornate and elaborate character.

HERBERT HAUSER.--Papers, Books, Etc.

The exhibit of this firm was of an extremely creditable and interesting character, and displayed in a high degree the progress of art and industry in the department involved.

BAKER M'FG. Co.—Wood and Metal Letters for Signs.

One of the most interesting features in the Fair was contained in this exhibit, which consisted of a complete enameling furnace, which was daily in operation producing beautiful and ornamental enameled metal letters, signs and designs. It attracted a great deal of interested attention.

HICKS-JUDD Co.--Book-binding, Printing, Etc.

All departments of a book-binding and printing establishment were magnificently exhibited by this enterprising firm in complete and practical operation. Book-binding, lettering, gilding, marbling, printing and many other departments of the book-maker's art. In this exhibit the "Mechanics' Fair Daily" was edited and printed.

THOMAS E. MILES.—Lightning Card Printing Machine.

This exhibit consisted of an extremely beautiful example of highly finished and ingenious mechanism in the shape of a miniature printing press adapted to print visiting or business cards. It was automatic in all its movements, including feeding and discharging.

DAILY REPORT.—Stereotype Plates.

"The Daily Report" not only entered enthusiastically into the work of furthering the interests of the Mechanics' Fair prior to its opening, but had one of the most interesting and instructive exhibits pertaining to newspaper work and production. All the details of the process of making a great daily were exhibited in this beautiful display.

CALIFORNIA INK Co.—Manufacturing of Ink.

This was another of those practical working exhibits which gave character to the Twenty-eighth Industrial Exposition. In this exhibit was displayed grinding rolls and mixing devices, whereby inks of all varieties of colors for various purposes were manufactured, making one of the most interesting and instructive working exhibits displayed.

EDWARD W. HILL.—Mimeograph.

In the Polk street gallery of the Pavilion, usually the center of an interesting group of spectators, the Mimeograph man displayed the capabilities of this remarkable production of inventive genius.

DEWEY ENGRAVING Co.—Engraving, Etc.

The art of reproduction has of late years been improved and perfected to an extent which seems almost incredible. In this exhibit were displayed beautiful examples and illustrations of the various methods and processes employed in photo reproduction. Not only were the examples shown of high artistic merit, but they also displayed fine and finished workmanship.

G. SIMMONS & Co.—Rubber Stamps, Etc.

This display consisted of rubber stamp manufacturing in practical operation. It was extremely interesting and instructive to a large throng of visitors who congregated daily around this exhibit.

A. L. DE CLAIRMONT.—Card Cutting.

As an example of manual skill combined with art, this exhibit was of an extremely interesting character. The exhibitor, whose tools

and material consisted simply of stacks of visiting cards and an ordinary penknife, produced most beautiful and artistic designs simply by the judicious cutting and raising the severed edges above the surface of the card. It is impossible without having seen the work to imagine how, by the aid of skill and art out of so simple an operation, such beautiful results could be produced.

H. S. CROCKER Co.—Book-binding, Etc.

This well known firm occupied one of the most prominent and centrally located places in the Pavilion with a complete book-binding establishment, employing some twenty or thirty operatives in the various departments. All of the details of book-binding, ruling, printing, etc., which make up a completed factory were here in full working condition. This was one of the most interesting and instructive exhibits in the whole Pavilion, and nightly attracted crowds of interested spectators to whom the process of book making doubtless was a great novelty.

J. HARRIMAN.—Shorthand Instruction.

Just outside of the Art Gallery this extremely interesting, if not pretentious, exhibit attracted wide attention. It consisted of a new system of shorthand writing, claimed by this exhibitor to be at least three times more rapid than the ordinary shorthand now in common use, consisting as it does of but ten fundamental characters, from which fact it derives its name. Many have become competent exponents of this system in a remarkably short time.

MARSH & KIDD.—Linen Marker.

RICKEY & ADLER.—Blotting Pad Machine.

This ingenious device consisted of means whereby a blotting pad would always be available for use, and so attached as to prevent its being misplaced or lost.

WERNER & Co.—Books.

Near the offices of the Pavilion on the second aisle was located this magnificent display of books and literature generally. Many magnificent examples of the printer's and binder's art were here exhibited as well as less pretentious masterpieces of the great authors.

H. W. FAUST.—Maps.

Maps in large quantities for practical and business purposes were displayed by this exhibitor.

CLASS 34.

Hairwork, Needlework, Embroidery, Shellwork,
Patterns, Etc.

MRS. W. W. REED.—Crazy Quilt.

This was an exceedingly interesting example of skill and ingenuity displayed in needle craft.

MRS. E. VESTEX.—Skeletonized Leaves, Lace Work, Etc.

As an example of patience and skill in producing beautiful results from unpromising material, this lady's exhibit certainly deserved the attention which visitors cordially paid to it. All manner of forest and garden leaves were here displayed, reduced to the beautiful tracery of lace work, which had originally constituted the veining of the living structure. Combinations of these beautiful lace like forms in artistic grouping produced results both artistic and creditable to the exhibitor, who is evidently an artist in her department of industry.

MAMIE COLLINS.—Crazy Quilt.

The number and variety of stitches intricate, ornamental and plain, displayed in this example of needlework was a source of much comment and encomium from interested visitors.

MRS. E. KELLY.—Fancy Quilt.

Every variety of material, texture and color in ladies' fancy goods was here combined in artistic skill, with stitches many and various, the whole forming a production of patience and art worthy of all praise.

MRS. J. MUIRHEAD.—Fancy Work.

This exhibit displayed in profusion the results of woman's industry and showed to advantage the many possibilities open to the intelligent, artistic and industrious of the weaker sex.

MISS ANDERSON.—Fancy Work.

A beautiful example of elaborate painstaking work.

MRS. M. MULLER.—Crochet Worsted Skirt.

As an example of what can be done with simple appliances and every day material, this result of the crochet needle and worsted challenges admiration.

MISS NELSON.—Crazy Quilt.

Velvet and satin, silk and plush, brocade and many other varieties of goods which delight the hearts of ladies aggregated here in artistic combination with stitches of great variety to produce a dazzling result.

Mrs. J. PETTEE.—Fancy Cross of Fish Scales.

It has long been held that art is independent of its vehicle. It would surely seem, in view of this exhibit, that this is a truism. Who but an artist could see the possibilities of art in so unpromising a vehicle as shad scales, but after seeing the artistic design with its iridescent flashings of colors produced by this exhibitor, no material would hereafter be considered as beneath the notice of a true artist.

CLASS 35.

Painting in Oil and Water Colors.

CLASS 36.

Decorative Arts.

(For details of exhibits in the above classes, 35 and 36, see "Cash Awards" and Report of Committee on Art.)

CLASS 37.

Sculpture, Statuary and Carving.

L. BLOHM.—Carved Furniture.

This exhibit formed an extremely interesting display of practical art in operation. Mr. Blohm, during the continuance of the Fair, carved many magnificent and artistic designs to the edification and instruction of hundreds of visitors. He displayed a unique departure in wood carving consisting of portraits in "alto-relievo," carved from the solid wood, which also formed the frame and background. Many of these beautiful and speaking likenesses were here displayed, besides which was a magnificent set of carved oak furniture, which had previously formed one of the most striking attractions of the woman's department of the California exhibit at the Columbia World's Fair.

P. C. GRANDMOUGIN.—Clay Modeling.

Certainly one of the most instructive and interesting sights, and one which attracted the most universal attention in the Fair, was the clay modeling by this talented exhibitor. Busts and full figure statuettes were produced by this artist. The remarkable facility and

skill in manipulating the plastic clay was truly surprising. It is not then to be wondered at that orders and patronage in large numbers resulted from this unique display.

H. VON SOHNEN.—Illuminated Eggs.

This exhibit was new, unique, and a very attractive feature of the Exposition. The eggs used were of the Emu from Australia, in size about half way between that of a goose and ostrich, and pale green in color on the outside. The inside of the egg being removed through a small hole in the end, the shell is ready for the artist who by cutting through the outer portion can get almost any degree of light and shade when illuminated by an electric incandescent lamp inside. Likenesses and landscapes were executed with wonderful fidelity, the oval shape adding greatly to the effect.

CLASS 38.

Engravings, Etchings, Prints, Penmanship, Etc.

O'HARA & LIVERMORE.—Fire Etching and Art Furniture.

The beautiful art furnishing material displayed by these talented ladies was highly artistic and ornamental, and many wished they were able to purchase one and all of the beautiful things made and displayed by them.

B. M. REIDSMA.—Card Writing.

MRS. M. TOUCHARD.—Art Work, Embroidery, Vases, Embroidery, Flowers, Etc.

CLASS 39.

Photography (Professional).

G. H. JONES.—Photography.

This comprised a very creditable exhibit of high art photography, well arranged and displayed.

H. H. NOBLE.—Photography.

J. R. HODSON.—Photography.

This magnificent exhibit of photographs included a large collection of photographs by a new, original and effective process. It attracted much favorable comment from visitors.

T. C. MARCEAU.—Photographs.

This large and magnificent display of Art Work was elaborately fitted up and a very attractive part of the gallery. His full-length photos finished in crayon or water colors were especially admired.

J. FOWZER.—Photographs.

Mr. Fowzer, as heretofore, made a fine display of photographic art, which, while not as pretentious as some others, contained the very gems of camera work and manipulation. The exhibitor might well feel pride in the eulogiums the public accorded the every day work from his gallery.

F. E. BUSHNELL.—Photographs.

This display by a new candidate for public favor was a special and attractive feature of the Art Gallery, both by the exquisite samples of plain photographs and photographs finished in crayon and water colors, and the highly artistic and original method of displaying them. The life-size figures were remarkable for pose, finish and faithful coloring to nature.

FULLERTON PHOTO Co.—Display of Photographs.

CLASS 40.

Chemical and Pharmaceutical Products.

VERONICA MINERAL WATER Co.—Mineral Water.**ROBERT FREELAND.—Soap.**

This exhibitor is a pioneer in the soap business, and has introduced many unique and striking novelties in the science and manufacture of saponaceous compounds. During the Fair he manufactured many of these specialties.

J. C. NEWMAN.—Hair Tonic.**HEIDER, WETZLER & THOMPSON.—Insect Powder.****CALORIC VITA OIL Co.—Caloric Vita Oil.****DR. E. J. FRAZER.—Aviva.****M. B. GREENSFELDER & Co.—“Faultless Chips” Chewing Gum.****MISS N. K. GENTRY.—Katila Cream.****GREENBAUM & Co.—Perfumes, etc.**

On the main floor of the Pavilion this prominent firm made a most interesting and attractive exhibit of California manufactured perfumes. Many exhibitors were unaware until this beautiful exhibit

called it to their attention that California can compete with credit against any other portion in the line of perfumes.

VICTOR NELSON.—Amycose.

This valuable preparation from the well-known eucalyptus is a very desirable adjunct to the sickroom, and extensively used for toilet purposes.

CHOCOLATE EMULSION Co.—Chocolate Emulsion of Cod Liver Oil.

H. KOHN.—Shoe Dressing, Blacking, etc.

PARAFFINE PAINT Co.—Roofing Paper, Paint, etc.

Centrally located on the main floor was displayed in its various uses the manufacture of this company's productions, displaying the wide field of usefulness of this water-proof material.

F. C. BURDETT & Co.—Cosmetics.

E. M. ELKUS Co.—Metal Polish.

CELERY, BEEF & IRON Co.—Celery, Beef and Iron.

This California manufacture attracted much attention, and seemed to have made for itself a host of admirers.

PACIFIC COAST BORAX Co.—Borax Products.

Certainly the most striking exhibit in the Pavilion was that made by this energetic firm. It consisted wholly of the products of borax, from the crude mineral to the finished commercial article. The booth consisted entirely of crystallized borax formed in columns and slabs which by their semi-translucence formed with electric light a real fairy-like grotto, gorgeous with all the prismatic colors. Not only was this exhibit attractive on account of its beauty and the originality of its conception, but tons apparently of the material was distributed gratis and taken away by thrifty housekeepers as practical souvenirs of the Fair and reminders of the unending wealth of resources with which California is endowed.

MADAME LIZZIE MARCHAND.—Cosmetics and Beauty Preparations.

In the Polk-street gallery this exhibitor arranged a most artistic and inviting parlor, which, judging from the throngs always to be found there, must have had attractions far greater than simply the beauty of the booth. These attractions doubtless were the preparations on exhibition, and, judging from the lady exhibitor, they must indeed been all which she claimed for them.

CLASSEN & Co.—Cleaning Compound.

This exhibitor displayed a valuable cleaning compound which is of very general application in the household for the removal of spots, dirt and impurities.

CALIFORNIA FIREWORKS Co.—Fireworks.

Probably one of the magnificent displays of fireworks ever placed on exhibition in California was made by this local firm. Over one thousand square feet of wall surface was elaborately decorated with every form of fireworks, which the ingenuity of the manufacturers or the demands of the trade has produced, besides which was also exhibited mortars, bombs and other paraphernalia incident to elaborate display.

ASBESTOS PARAFFINE Co.—Asbestos Products.**JOHN MULHERN. — Flavoring Extracts, Dr. Abernethy's Green Ginger Brandy, etc.**

These California products worthily represent their class, as all California products have done in competition with other and less-favored localities.

This exhibitor also displayed a full line of flavoring extracts. They were handsomely put up in pound and four-pound bottles, and in quality and appearance are excellent. Dr. Abernethy's Green Ginger Brandy is a preparation extensively used by those afflicted with dyspepsia and other ailments.

MRS. L. J. WHEELOCK.—Hair Dressing and Toilet Articles.**J. W. ELY & Co.—Wild Cherry Phosphate.**

An interesting and attractive display was made by this exhibitor of the pleasant and healthful beverage termed "Wild Cherry Phosphate."

HARTWELL, MITCHELL & WILLIS.—Perfumery and Toilet Articles.**NEW ENGLAND SOAP Co.—Soap.**

From such a material as soap one could hardly expect imposing and artistic results, but in the hands of an artist it would seem that any material, no matter how unpromising, can be made to assume forms and characteristics apparently wholly at variance with its natural aptitudes. The exhibit of this firm emphasized this fact, for out of the various kinds and colors of soap manufactured by them they erected a structure which for artistic beauty and imposing elegance was a marvel to all who beheld it. This device, when lighted up by an elaborate system of electrical illumination, constituted an exhibit which will be long remembered, and form a lasting monument to their enterprise, and doubtless add materially to their already extensive list of customers and admirers.

STANDARD SOAP Co.—Soap, Candles, etc.

This beautiful exhibit comprised not only a large variety of the articles manufactured by the firm, but also included some of the ponderous and elaborate machinery used in the manufacture of soap.

The processes in which these machines are employed were here carried on, greatly enhancing the interest of the exhibit to the multitude of spectators who daily and nightly thronged around it.

MUTUAL MFG. Co., LTD.—Inks, Extracts, Polish, etc.

This exhibit comprised writing inks of all kinds—blue black and jet black fluids, combined writing and copying ink, red, blue, green and purple inks, shading inks, rubber stamp inks, mucilage, flavoring extracts, bluing, castor oil, sewing machine oils, gun oils, bicycle oils for lubricating and illuminating, solid illuminating oils, bicycle chain lubricants, Olympic “rub down,” White Navy metal polish (liquid and solid), and toilet articles. The preparation of these articles affords employment to many girls in this city who find a means of livelihood in putting up these goods, a work eminently fitted for their skillful hands and yet not too laborious.

YUCCA ROOT SOAP Co.—Soap and Perfumery.

The base of this flourishing industry is one of those remarkable vegetable products for which the west has become famous. It is a perfectly natural vegetable soap, needing but to be extracted to be ready for immediate use. Indeed, in its natural shape it is used by the Mexicans and Indians when such an article is required.

HENRY JESSEN.—Germatine.

NABER, ALFS & BRUNE.—Damiana Bitters.

For the purpose for which this article is intended it is doubtless efficient and satisfactory.

MADAME BROWN.—Face Balms and Powders.

J. A. HOLMGREN.—Stove Blacking.

CLASS 41.

Groceries, Meats, Flowers, Etc.

F. H. AMES & Co.—Grocers' Specialties.

This interesting and artistic exhibit attracted much attention from those to whom the matter of groceries is a vital question. His display of the Highland Brand of Evaporated Cream and Cudahy's Extract of Beef were made a special feature.

AMERICAN CONDENSED MILK Co.—Condensed Milk.

Not only was this exhibit interesting from an artistic point of view, but from the fact that the process of filling the cans with condensed milk and sealing them was carried on in precisely the same manner as in the factory.

FISHER PACKING Co.—Pickles.

One of the most noteworthy exhibits in the whole Pavilion was that of this firm. It was not only an interesting, but an extremely instructive display. The exhibit consisted of an entire pickle factory in active operation. From twenty to thirty girls, each day and night, performed the usual tasks connected with the making and packing in commercial form of all the great varieties of pickles and condiments put up by this extensive firm. Apart from this feature of the exhibit, which in itself attracted multitudes of interested spectators, the arrangement of the whole display was artistic in the extreme. The impression derived from this exhibit entirely removed the erroneous notion that the putting up of pickles necessitates untidiness, disorder and general unpleasantness. Here the young working women, in their snowy white aprons, worked with a neatness, cleanliness and orderliness which added to the ordinary appetizing characteristics of the material.

W. H. MINER.—Cocoa and Chocolate.

One of the most striking booths was that of W. H. Miner, the chocolate manufacturer. It occupied a large space on the central aisle, from which samples of this California-made article was distributed to the eager thousands who during the course of the Fair thronged the aisles surrounding the booth.

J. WOLFF.—Royal Dutch Cocoa.

In a neat and attractive booth on the Hayes-street side of the Pavilion this exhibitor distributed thousands of samples of his wares, and from the numbers who eagerly sought the sample packages it is safe to assume that the Royal Dutch Cocoa has made for itself multitudes of ardent admirers.

CHINO VALLEY BEET SUGAR Co.—Beet Sugar.

The fine samples of sugar exhibited by this firm were from their plant in San Bernardino county.

THAIN BROS.—Confectionery.

The process of manufacturing all kinds of candies, from sugar in barrels to the finished product, put up in neat and fancy boxes or packages, was carried on each day and evening before the eyes of visitors.

I X L TAMALE Co.—I X L Tamales.

The lovers of this peculiar California product had the opportunity of witnessing its preparation in all the details except death of the chicken and growth of the corn husks in which the eatable portion is wrapped.

CLASS 42.

Wines and Brandies of California Production, From
California Vineyards.

The Wine Industry of this State was well shown at this Exposition both by quality and display. Each year seems to show an increased excellence in the various brands of wine exhibited, and these Fairs of the Institute seem to be the most favorable place where the judgment and expressions of unbiased opinion on the vintages of our State may be readily obtained from the greatest number.

ARPAD HARASZTHY & Co.—Wines and Champagne.

Mr. Haraszthy's wines, particularly his Eclipse Champagne, is known in nearly every place in the civilized world, and an ever-increasing demand is the best testimony of its excellence.

E. GARNIER & Co.—California Wines.

A nicely arranged exhibit of the best brands of native wines.

E. GUNDLACH & Co.—California Wines and Brandies.

The display of this noted house was comprehensive, well arranged, advantageously located, and comprised in great variety all the noted wines of their production. The excellence of their California brandy was especially commented upon by competent judges.

CALIFORNIA CHAMPAGNE Co.—Champagnes.

WETMORE-BOWEN Co.—Cresta Blanca Wines.

This wine is probably the best known brand on this coast, its high price attesting its quality and desirability by wine connoisseurs.

ITALIAN SWISS COLONY.—California Wines, Champagnes and Brandies.

The design, arrangement and fitting of this exhibit was one of the finest in the Fair, and samples of all their noted red and white wines were freely dispensed to thousands who desired to taste their quality. Their champagne was of superior excellence, as attested by the judges.

THE CALIFORNIA CONDENSED JUICE Co.—Condensed Juices.

This attractive and ornamental exhibit called the attention of visitors to a new and extremely palatable article of consumption which promises in a measure to supersede the use of fermented liquors. The condensed juice of the many varieties of grapes and other fruits were on exhibition, and samples were distributed freely among those desiring to acquaint themselves with this new form of beverage. It will undoubtedly prove a desirable addition to the already long list of articles which California has added to the world's resources.

P. C. Rossi & Co.—California Vermouth.

The quality of the manufacture was equal to the best imported and received high commendation.

G. L. HERGERT—Malt and Rye Whiskies.

CLASS 43.

Fermented Products.

FREDERICKSBURG BREWING Co.—Lager Beer.

The product of this company, particularly of its Export Beer, has long been known for its uniform quality and general excellence. The space occupied by this exhibit was artistically fitted up and samples dispensed by polite attendants, who gave any desired information and welcomed visitors in the most hospitable manner.

W. H. MARTIN.—Cider (manufactured in the Pavilion).

Though this was a privilege, and to sample it cost money, yet those who paid were satisfied, and the novelty of crushing apples and extracting the juice was a continual source of interest.

W. H. STEIGER.—Root Beer.

CLASS 44.

Tobacco.

J. D. CULP.—California Tobacco and Cigar Making.

This display is deserving of more than ordinary notice, and too much praise cannot be given to Mr. Culp for his energy and endeavor to advance the interests of the State by raising and manufacturing into form for consumption an article so extensively used as is tobacco. Several operatives were at work each day and evening in making cigars whose quality compares favorably with the imported. There seems to be no reason why this important industry should not succeed, as the plant is well adapted to the soil and climate of this coast, and no doubt by proper cultivation may attain here the noted quality that belongs to Havana. The tobacco used by Mr. Culp was grown at San Felipe.

FRANK HOLLAND.—Manufacture of Pipes.

This exhibit, though not of tobacco, is closely connected therewith, and was an interesting process to witness. By the aid of proper ma-

chinery pipes for smokers were turned out in great number and variety.

CLASS 45.

Geology, Mineralogy, Zoology, Botany, Etc.

WAINWRIGHT & EASTON.—Display of Coal.

GRAY BROS.—Building Stone.

The samples shown were from well-known quarries in this State.

R. E. KELLEY.—Minerals.

This was a fine mineralogical collection, comprising almost every variety found in this State, all nicely arranged and catalogued.

THEODORE HERMANN.—Sea Shell Curios, Etc.

Mr. Hermann has had a long and varied experience in this city in collecting all that is rare, curious and interesting. His display filled three long cases, and was attractive to both the scientific inclined and general visitor.

JOHNSON & EMIGH.—California Wild Flowers.

The botanical specimens collected and shown by this firm comprised almost every specimen found in this State, all neatly arranged in suitable albums and each labeled with its common and scientific name.

UNIVERSITY OF CALIFORNIA.—Specimens of Plants.

The University kindly sent specimens of the various plants useful for forage or the wants of man, their extensive experimental grounds at Berkeley giving them facilities for such a display as but few in the United States can equal.

CLASS 46.

Farm Products.

PLEASANTON HOP CO.—Display of Hops Raised at Pleasanton, Alameda County.

W. F. FORBES.—Dressed Ramie.

The samples shown of the fibre of this valuable plant was of the best quality; its length and strength equaling the very best from India. It is hoped that this important product will in the near future be one of the staple productions of this State, whose climate and soil is particularly adapted to its cultivation.

CLASSIFIED LIST OF PREMIUMS AWARDED

CERTIFICATES OF SUPERIORITY

Class	Exhibitor	Article
1	J. L. Hicks	Gas and Gasoline Engines
1	M. L. Mery..	Sparking Boxes, Governor and Generator for Gas Engines
1	R. J. Rolfson	Gas Engine
1	Day & Hunter	Feed Water Heater and Filter
1	Krogh M'fg. Co.....	Centrifugal Horse Power and Triple Acting Pumps
1	Krogh Manufacturing Company.....	Horse Power Mining Hoist
1	Krogh Manufacturing Company	Gate Valve
1	Hadwen Swain M'fg. Co.....	Printing Press and Gas Engine
1	J. C. Winans....	Automatic Damper and Pressure Regulator
1	W. H. Ohmen	Steam Engine
1	Chas. Moore & Co	Display of Engines and Boilers
2	C. H. Evans & Co.....	Steam, Power, Air, Deep Water and Air Circulating Pumps
2	J. P. Lightbody	Water Elevator
3	J. C. Winans.....	Steam and Water Packing, Lubricating and Boiler Compound
3	C. F. Marwedel.....	Machinists' Tools and Bicycle Supplies
3	Market Street Railway Co.....	Wheel Grinding Machinery in Operation
4	Pacific Saw Manufacturing Company.....	Display of Saws
5	Pacific States Type Foundry.....	Williams Typewriter
5	J. F. Quane	Sign Stenciling Machine
5	Standard Soap Company.....	Display of Soap-making Machinery
5	Merchants' Association.....	Paving Material and Asphalt
5	L. Petersen.....	Models of Inventions
5	Washburn & Moen M'fg. Co.....	Nail-making Machinery in Operation
12	Washburn & Moen M'fg. Co.....	Display of Wire Rope and Wire Goods
5	California Ink Company	Printers' Ink and its Manufacture
40	California Ink Company	Printers' Ink and its Manufacture
5	San Francisco Autographic Register Company.....	Registers
6	George Johnston.....	Bryan Mill Concentrator
6	Midas Gold Saving Machine Company.....	Gold King Amalgamator
6	George E. Woodbury	Concentrator, Concentrator Belt and Ore Car
6	B. J. Turman.....	Amalgamator and Distributor Combined

Class	Exhibitor	Article
6	Joshua Hendy Machine Works...	Display of Improved Mining Machinery
6	E. G. Denniston.....	Silver Plated Amalgamating Plates
6	L. Radovich.....	Rock Breaker
6	Thomas N. Furlong.....	Cement Laundry Trays
7	Sale & Smith.....	Washing Machine
7	B. E. Henricksen.....	Adjustable Hose Bridge
7	B. E. Henricksen.....	Adjustable Clothes Dryer
9	George W. Kneas.....	Boats and Boat Building
9	Watts & Trott.....	Row Boat
10	Carlson-Currier Company.....	Silk Threads, Cocoons and Raw Silk
10	A. D. Ayres.....	Display of The White Sewing Machines
12	Selby Smelting and Lead Works...	Display of Lead and its Manufacture
12	A. Draeger.....	Hand Made Horse Shoes
13	Steiger & Kerr.....	Display of Heating Stoves, The New California Range, and Adjustable Grates.
13	Chas. Brown & Son.....	(1.) Eastern Royal Winthrop, and Winthrop Grand Ranges and Monitor Steel Ranges. (2.) Orient and Barler's Ideal Oil Stoves.
13	William Cronan.....	Hot Water Heater
13	A. Graff.....	Coal Oil Burner and Lamps
14	Model Window Hinge Company.....	Window Hinge
15	John Hermann.....	Safe, California Manufacture
16	Cleveland Faucet Company.....	Improved Faucets
16	San Francisco Gas Light Company.....	Display of Gas Stoves
16	P. E. Barker.....	Display of Metal Spinning and Manufactured Articles
16	J. C. Amelung.....	Improved Wine Filter, of the Loen Filter Co., Cleveland, O.
17	Improved Asphalt Pipe Company.....	Asphalt Pipe
17	Inyo Marble Company.....	Display of Marble from Inyo County
17	Jones Bros. and Company.....	Tombstones and Monuments
17	Thomas C. Butterworth.....	Display of Art Glass
17	Frank A. Kimball.....	Marble from San Diego County
18	G. F. Atkinson..	California Wood Novelties
18	G. Hamada.....	Model of a California Home
18	Kenny & Wells.....	Grill Work and Inlaid Parquet Floors
19	R. Curtaz & Son.....	Display of Chickering Pianos
19	Kohler & Chase.....	Display of Musical Instruments
19	Louis Miller.....	Accordions
19	Herman Muller.....	Home Manufactured Violins
19	F. W. Kreling.....	Display of Banjos
20	J. Christensen & Company.....	Bicycle Brake
20	F. W. Theisen & Company.....	Delivery Wagon

Class	Exhibitor	Article
20	Baker & Hamilton	Bicycle Tires
20	Baker & Hamilton	Agricultural Implements and Vehicles
20	Columbus Buggy Co.	Display of Buggies
20	George C. Smith	Cyclometer
20	Joseph Wilson	Burglar Alarm Novelties
20	William Gall	Bicycle Stand
21	Chas. M. Plum & Co.	Oriental and Mahogany Furniture
21	E. H. Marwedel	Brass Bed Steads
21	A. V. Henko	Henko Bed and Wardrobe Couch
21	Jos. Fredericks & Co.	 Display of Bed Room, Dining Room, Parlor and Office Furniture
21	Mrs. R. G. Eubank	Combined Trunk and Bureau
21	Pacific Fringe Co.	Silk Cord and Fringe
22	David Woerner	Display of Cooperage
23	Buchanan Bros.	Home Manufactured Brushes and Carpet Sweepers
23	Zan Bros.	California Made Brooms
24	Siebe-Glanville Co.	Lasts
24	P. F. McNulty	Boots and Shoes
24	Truman S. Clark & Son	 Display of Wire Mattresses, Iron Bed Steads Folding Cots and Bedding.
24	Placido Rios	Embossed Leather Work
24	H. A. Wegener	Saddlery and Stamped Leather
24	New York Belting and Packing Co.	Display of Rubber Goods
24	L. D. Stone & Co.	Horse Boots
25	W. F. Forbes	Ramie, Raw and Dressed
25	Fulda Bros.	Water Tanks
25	Joseph Neumann	Display of California Native Silk Worms
25	William Hilton	Display of Silk Weaving
25	Albert J. Grez	Display of Hair Jewelry
26	J. Benyakar	Egyptian Curios
26	Golden Gate Woolen M'fg. Co.	Woolen Blankets and Other Goods
27	M. J. Keller Co.	Display of Gentlemen's Shirts, Own Manufacture
27	Thomas E. Kent	Bicycle Clothing
27	F. Thomas	Dyed and Cleaned Clothing
27	Columbian Woolen Mills	Display of Cloth and Manufacture of Clothing
27	Chas. Lyons	Gentlemen's Clothing
27	Chas. Fisher & Company	Bicycle Leggings
28	D. Hamburger & Company	Display of Corsets
28	George A. Turner	Curling Iron Holder
29	Heald's Business College	Display of Penmanship
29	A. Vandernaillen	Electrical Miniature Railroad
30	J. C. Sala	Surveying Instruments
31	Dr. H. G. Young	Display of Dentistry

Class	Exhibitor	Article
32	M. F. Lucas.....	Jewelry Engraving
32	H. Fortriede.....	Shell and Ivory Goods
33	George H. Tietjen.....	Metal Signs
33	Baker Manufacturing Company.....	Metal Enameled Signs
33	The Hicks-Judd Company.....	Book Binding and Printing
33	A. L. De Clairmonts.....	Artistic Card Cutting
33	H. S. Crocker Company.....	Paper Ruling
33	Marsh & Kidd.....	Linen Marker
33	Werner & Company.....	Display of Books
34	Mrs. W. W. Reed.....	Crazy Quilt
34	Mrs. E. Vestey.....	Point Lace, Sea Moss and Wild Flowers
34	Mrs. H. Muller.....	Crochet Skirt
34	Mrs. John Pettee.....	Fancy Cross of Fish Scales
34	Mrs. E. Kelly.....	Fancy Quilt
34	Mrs. E. W. Storer.....	Bed Spread
35	Miss Gussie Burger.....	Kensington Oil Painting
35	Berwin & Gassner.....	Sealskin Garments
37	L. Blohm.....	Wood Carving
39	Theodore C. Marceau.....	Display of Crayons and Water Colors
39	Fred. H. Bushnell....	Display of Photographs and Photographic Work
40	Chocolate Emulsion Co.....	
	Dr. Gordin's Chocolate Emulsion of Cod Liver Oil with Hypophosphites.	
40	Hartwell, Mitchell & Willis.....	Perfumery and Toilet Articles
40	Naber, Alfs & Brune.....	Damiana Bitters
40	Asbestos Paraffine Paint Co.....	Asbestos Products
40	Dr. B. J. Smith.....	Caloric Vita Oil
40	Heider, Wetzler & Thompson.....	Insect Powder
40	Veronica Mineral Water Co.....	Mineral Water
40	Classen & Co.....	H. & H. Cleaning Compound
40	Madame Lizzie Marchand..	Hair and Complexion Preparations
40	Yucca Root Soap Co.....	Soap Bubble Fountain
40	Pacific Coast Borax Co.....	
	Display of Borax, Boraxo, Boraxaid and Boric Acid	
40	Paraffine Paint Co.....	
	Building Roof Paper, Pile Covering and Compound Paint	
40	Celery, Beef and Iron Co...	Celery, Beef and Iron, a California Product
40	John Mulhern.....	
	Dr. Abernethy's Green Ginger Brandy and Flavoring Extracts	
40	California Fire Works Co.....	Display of Fire Works
41	Chino Valley Beet Sugar Co.....	Beet Sugar
41	Herman Von Sohnen.....	Engraved Eggs
41	I X L Tamale Co.....	I X L Tamales
41	Fisher Packing Co.....	Display of Pickles

Class	Exhibitor	Article
41	Rathjen Bros.....	Improved Coffee Pots
41	Standard Soap Co.....	Candles
41	Chemical Paint Co.....	Roofing Paint
41	W. H. Miner.....	Cocoa and Chocolate
41	F. H. Ames Co.....	Cudahy Extract of Beef
41	F. H. Ames Co.....	"Highland Brand" Eastern Evaporated Cream
41	Bates & Suydam.....	Gelatine
41	Thain Bros.....	Confectionery
41	Mrs. D. M. Heermans.....	Salad Dressing
41	George W. McNear.....	Wheat Flour
41	New England Soap Company.....	Toilet and Laundry Soap
42	Italian Swiss Colony.....	California Champagne, Burgundy and Chablis Wines
42	E. Garnier & Company.....	Display of California Wines
42	J. Gundlach & Company.....	California Wines and Brandies
42	Wetmore-Bowen Company.....	Cresta-Blanca Wines
42	G. L. Hergert.....	Malt and Rye Whiskeys
42	P. C. Rossi.....	California Vermouth
43	Fredericksburg Brewing Company.....	Display and Quality of Draught and Export Lager Beer
44	J. D. Culp.....	Cigars Made From California Tobacco
45	R. E. Kelly.....	Display of Mineral Specimens
45	Gray Bros.....	Crushed Rock for Roadways
46	Baker & Hamilton.....	Creamery and Dairy Outfit
46	H. E. Bullock.....	Fruit Canner
46	American Condensed Milk Company.....	California Condensed Milk and Evaporated Cream
46	Pleasanton Hop Company.....	Display of Hops
46	California Condensed Juice Company.....	Condensed Fruit Juices

CASH AWARDS.

OIL AND WATER COLOR PAINTINGS.

Eleanor Warren—Avarice.....	\$10 00
Sarah E. Bender—Wild Violets.....	5 00
J. D. Strong—Portrait of Captain Morse.....	10 00
Wm. Keith—Landscape.....	40 00
Mary T. Menton—Violets.....	5 00
Mary T. Menton—Chrysanthemums.....	10 00
Mrs. Burton—Hand Painted Screen.....	5 00

PREMIUMS AWARDED.

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Alice B. Chittenden—Roses	20 00
Annie Harmon—A'ter the Rains.....	15 00
H. R. Deitz—Off the Whistling Buoy	10 00
Grace Hudson—An Indian Baby.....	40 00
Mrs. Wm. Hahn—The Little Gretchen	10 00
Wm. Hubacek—Tea Set.....	20 00
A. Joullin—Presidio Marsh.....	10 00
H. Raschen—Portrait	20 00
H. Raschen—Girl Watering Flowers.....	40 00
E. F. Van Winkle—Greek Philosopher	5 00
Chris Jorgensen—English Setter "Flake L".....	35 00
Chris Jorgensen—Evening in the Valley of Christ.....	15 00
F. M. Vermorcken—French Girl.....	5 00
Lillian Candlin—A Native Daughter.....	20 00
Lou E. Wall—Sketch	10 00
Lou E. Wall—A Study	20 00
Susan Looseley—Afternoon	10 00
Susan Looseley—In Japanese Costume	10 00
L. P. Latimer—Hay Field (Under the Oaks).....	30 00
H. R. Hopps—A Choppy Sea.....	5 00
Mrs. Clara Curtis—A Gray Study.....	10 00
Kate Chandler Thompson—A Study.....	15 00
Mrs. Thomas Gihon—Wing and Wing.....	25 00
Gertrude Dorgan—A Morning in Spring.....	5 00
J. E. Robinson—Fisherman Drawing the Net.....	25 00
A. F. Mathews—The Weekly Wash.....	20 00
O. Soyede—Still Life.....	5 00
G. Cadenasso—A Corner in My Studio	10 00
Lillian Candlin—A Sketch.....	15 00

PASTEL AND DRAWING.

Alice B. Chittenden—Portrait	20 00
G. Cadenasso—Charcoal Study.....	15 00
L. P. Latimer—India Ink Sketch.....	15 00

STATUARY AND MODELING.

J. Milo Griffith—General Sheridan.....	20 00
J. Milo Griffith—The Tudor Shield	20 00
J. Milo Griffith—Marble Bas Relief.....	15 00
Carry D. Terry—Bust.....	10 00
Carry D. Terry—Bas Relief.....	10 00
Rupert Schmid—Bust of Dr. Richter.....	20 00
Rupert Schmid—Bust of John T. Doyle.....	50 00
M. Selig—Plaster Ornament.....	5 00

J. M. Griffith—Bronze Figure	20 00
J. M. Griffith—Bust of Dr. D. McLean.....	5 00

FIRE ETCHINGS.

Grace G. Livermore—California Oaks	5 00
Lillian O'Hara—Ecce Homo	5 00

TAPESTRY PAINTINGS.

Lillian O'Hara	5 00
Adela E. Dugan.....	5 00
Vermorcken & Barozzi	10 00

DECORATED PORCELAIN.

Adela E. Dugan.....	5 00
Miss E. Stallman—Plaque and Sundry Articles	10 00
Helen D. Phillipe—Plaque and Other Pieces.....	15 00

DECORATIVE AND INDUSTRIAL ART.

University of California—Natural Products	10 00
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Total.....	<u>\$870 00</u>
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REPORTS

FROM

Standing Committees and Superintendent

OF THE

TWENTY-EIGHTH INDUSTRIAL EXPOSITION

ART.

To the Board of Trustees of the Mechanics' Institute :

DEAR SIRS—The undersigned Committee on Art herewith beg to submit their final report of matters connected with the Twenty-eighth Industrial Exposition:

Mr. Solly Walter, having been appointed Superintendent of the Art Exhibit in May, called a meeting of local artists in the month of June to advise with them in regard to a hanging committee and on other matters. The first meeting was so poorly attended that it adjourned without doing any work. The second meeting was even less successful; consequently your Committee and the Superintendent proceeded to complete arrangements without the aid of local artists. The result was that the gallery was thrown open on the 13th day of August. The catalogue, which was placed on sale on Monday, the 18th of August, showed that there had been admitted and hung 121 oil paintings by local artists and 35 oil paintings loaned by friends of the Institute, also 105 water colors, pastels, crayons and washings, by local artists and loaned by friends, making a total of 261 pictures. Under the head of statuary, there were placed on exhibition 19 pieces, all by local artists, added to this was an art exhibit made by Nathan, Dohrman & Co., comprising some of the best works of American, French and German artists. Of painted porcelain, there were three local exhibitors and the same number in tapestry painting. There was also a very creditable exhibit of fire etching on wood and leather. The University of California was represented by a large and interesting exhibition of architectural, decorative and industrial work, hung under the direct supervision of Professor Ardley of the University of California. There were six exhibits of pho-

tography of such excellence that they would have done honor to any World's Fair exhibition.

The Art Gallery was, probably, next to the musical performance, the chief attraction of the Fair. Of all pictures offered, about 15 per cent were refused as not of sufficient merit. This will partly account for the smaller number of total exhibits as compared with former years when anything that was offered was accepted, probably under the erroneous impression to thereby encourage beginners, but it was entirely lost sight of, that by not requiring a certain degree of, to say the least, proficiency, that the plane of art in this city was lowered unnecessarily, and that the Management exposed itself to ridicule, and, finally, that many really worthy artists withheld their work for fear of getting into bad company. Your Committee is convinced that the strictness shown in the admission of pictures this year, will, if adhered to, have a good effect for future exhibits, and will do much to raise the standard of art on this Coast. Another reason why fewer pictures were offered by local artists this year, was that strenuous efforts were made by the Management of the Sacramento State Fair to induce artists to send their pictures there, and large cash premiums were hinted at, whereas, on the other hand, the report had been spread in art circles that this year the Mechanics' Institute would only award diplomas and no cash prizes. Your Committee would advise that in future not less than one thousand dollars be set apart to be distributed in prizes for Art exhibits, and that this resolution be made public, say six months before the opening of the Fair, thus enhancing the financial success of the Fair and also encouraging art in this city. Having the latter object in view, your Committee would earnestly recommend that the Institute purchase each year at least one painting, or piece of statuary, out of the number exhibited by local artists, at the annual exhibition, and which shall have been finished in the preceding year.

The questions: First—Can a work of art not any more in the possession of the artist who executes it, be entered for competition, and if so entered be awarded a prize? Second—Should the prize go to the owner or to the artist? must be definitely settled by this Board. Your Committee would, however, recommend that such works of Art be allowed to compete, provided they have not been entered for competition in any previous year at our exhibitions.

We would also recommend that in future the number of Judges for the Art Department should not be less than nine, in order to make it more nearly possible to obtain a plurality of judgments.

At future Fairs not any of the space in the Art Gallery should be occupied except by actual fine art exhibits, including photography.

The light during the day time at both the East and West ends of the gallery should be improved in order to economize the cost of artificial light, and to prevent overheating. For the latter reason the illumination of the gallery should be changed from gas to electricity.

During the Fair, Mr. Solly Walter gave one lecture on Art, which was well attended, but it became very plain that the Art Gallery, during the Fair time, was not the proper place for lecturing. As Mr. Walter has expressed himself willing to deliver the other two lectures at the Institute, we think advantage should be taken of this offer.

In conclusion your Committee desires to congratulate the Institute on the very satisfactory result of this year's Art Exhibition. By excluding all low standard work, the total effect was heightened. Where at former exhibitions art critics left the gallery with a smile of derision, your Committee has had the gratification of hearing many words of praise uttered by competent judges. This promises well for the future. We believe that hereafter true artists will come forward with their work more freely, and prove that San Francisco has reasons to be proud of them.

ERNST A. DENICKE,

GROVE P. AYERS,

Committee on Art.

REPORT ON MACHINERY.

To the President and Trustees of the Mechanics' Institute :

GENTLEMEN—Your Committee on Machinery beg to report that at the close of the Twenty-eighth Industrial Exposition, just concluded, that the machinery and boilers at the Pavilion have been left in first-class condition; they have been inspected by the insurance companies and certified to as being all right.

The consumption of coal has been below that of any former Fair, both in the total and per day. The Oregon Improvement Company have honorably fulfilled their contract, and have replaced the grate bars under boiler as formerly.

The line of shafting put up in main building is an addition, the cost of which will be saved at the next Fair.

Machinery Hall has been whitewashed, and the water tanks and sewers repaired, and everything left in good order, ready for another Fair.

The heater for hot water for the boiler put in place by Day & Hunter as an exhibit has worked very satisfactorily, and far superior to the old Llewellyn Heater belonging to the Institute. Day & Hunter offer to sell the heater for \$300.00, and the old heater cost \$500.00. The offer is now under consideration by the Committee, and will be reported at future time.

The whole of the gas fixtures are now in good condition, and have been very satisfactory during the Fair.

The cost of gas will come under the proper head.

GEORGE CUMMING,

HENRY ROOT,

H. C. HOLMES,

Committee.

RECEIPTS FOR PRIVILEGES.

Anslan, Wm., Nickel-in Slot Machine.....	\$25 00
Brocks, F. B., Guessing Machine.....	2 90
Bényaker, J., Oriental Goods.....	5 00
Dé Clairmont, A., Card Cutting.....	8 00
Eaton & Eaton, Pleating Machine.....	10 00
Ely, J. & Co., Wild Cherry Phosphate.....	25 00
Freeland, Robert, Soap.....	25 00
Greenbaum & Co., Perfumery.....	51 36
Greenbaum, A., Electric Engraving.....	5 00
Greensfelder & Co., Faultless Chips.....	71 82
Hartwell, Mitchell & Willis, Perfumery.....	25 00
Heermans, Mrs. D. M., Salad Dressing.....	25 00
Heider, Wetzler & Thompson, Insect Powder.....	25 00
Hicks-Judd Co., Newspaper.....	550 00
Martin, W. H., Whips and Canes.....	30 00
Martin, W. H., Cider and Lemonade.....	150 00
Marchand, Madame, Hair Tonic and Cosmetics.....	25 00
Marsh & Kidd, Linen Marker.....	25 00
Marston, Mrs., Aluminum Goods.....	7 00
Moses, S., Optical Goods.....	45 00
Newman, J. C., Hair Tonic.....	25 00
Payne, Mrs. M., Fruit Preserving.....	6 00
Reidsma, B. M., Card Writing.....	10 00
Ryan, F. T., Weighing Machine.....	25 00
Shehadi, Mr., Oriental Goods.....	10 00
Sheppard, A. E., Fruit Juices.....	25 00
Sparrow, C. G., Restaurant.....	250 00
Steiger, W. H., Root Beer.....	60 00
Thain Bros., Candy, Soda Water, Ice Cream and Pop Corn.....	2,650 00
Wickham, Anna, Imitation Stones.....	15 00
	\$4,212 08

REPORT OF COMMITTEE ON MANAGEMENT.

To the President and Board of Trustees of the Mechanics' Institute :

DEAR SIRS:—

Your Committee on Management respectfully submit the following report on the matters pertaining to their duties in connection with the Twenty-eighth Industrial Exposition of the Institute:

The Rules formulated for the government of all persons connected with the Exposition, either as visitors, exhibitors or employees, have proven fairly efficient, and worked with little or no friction, and it is difficult to suggest any especial improvement in them for the guidance of future committees.

The application of the new method of arriving at the comparative merits of the various articles entered for competition, by percentages, has demonstrated that with better preparation than was possible at the initial trial, the plan must prove effective and satisfactory and an improvement on former methods. In this connection your Committee would respectfully urge upon your Board the early appointment of the Judges they intend to call upon to perform the important duty of naming the successful competitors in the Exposition of 1896.

Your Committee would also suggest, and recommend, that a clerk be appointed whose duty it will be to issue the tickets to the employees of exhibitors at the next Fair under the direction of the proper official. In 1895 there were issued 746 employees tickets, and this large number imposed a great amount of clerical work upon some of this Committee, from which future committees should be relieved.

The sum received from the sale of privileges compares very favorably with the receipts from similar sources in previous years. There were thirty of these sources of revenue in the Pavilion, and the sum of \$4,212.08 was realized from them, in sums ranging from \$2.90 to \$2,650.00, and in all but a very few instances the purchasers of privileges were satisfactorily repaid for their investments.

We submit herewith a detailed statement of the privileges sold and the amount received for each.

Very Respectfully Yours,

RODNEY KENDRICK,

Chairman.

APPENDIX

ADDRESS OF A. S. HALLIDIE

PRESIDENT OF THE MECHANICS' INSTITUTE

AT THE

RECEPTION TO THE MANUFACTURERS' AND PRODUCERS' ASSOCIATION OF CALIFORNIA BY THE MECHANICS' INSTITUTE OF SAN FRANCISCO, SEPTEMBER 13, 1895, AT THE PAVILION.

GENTLEMEN: It was thought that before the Twenty-ninth Industrial Fair closed it would be pleasant to meet the trustees of the Manufacturers' and Producers' Association in a social way, because the Mechanics' Institute has ever since its organization stood by the mechanics, the manufacturers and the producers of this State in its endeavor to build up those industries which create a State. To this end it organized these Industrial Expositions which have done so much to show the world what California can raise from her soil or manufacture in her shops.

Both associations are working to the same end and have the same purpose in view, the one though the combination of those in interest in seeing that all industries are retained and protected here, and the other in showing to the world through its Industrial Fairs what these industries have already produced in this State, and thus the Mechanics' Institute, the oldest organization of its kind in this State, has invited the Manufacturers' and Producers' Association, the youngest of its kind, here to-night for a brief interchange of views on the purposes of that organization and in recognition of the services it has thus far rendered the State.

Between this State and the centers of population and industry are great natural barriers which, under certain conditions, could be made to dismember us from the remainder of our common country that would *compel* us on the Pacific Coast to depend solely upon our own resources.

In the event of such a contingency arising, and in the absence of such diversified industries as are necessary for the maintenance of a community, we would be comparatively helpless in maintaining our autonomy or in rendering assistance to our common country which the ordinary principles of duty would suggest or the feeling of patriotism would compel.

The internal developments of the country at large have been rapid and permanent, but they are centered around localities which natural resources or public sentiment have created.

In few parts of these United States has the necessity of organization for defense and existence through the powerful influences of the presence of the various manufacturing and producing industries incidental to a civilized community been so apparent as in California, and from a political and economical standpoint, if California is worth anything to our great sisterhood of States, she is worthy of being placed in a position of ability to maintain herself for an indefinite period in her isolation and to be a bulwark on the Western shore against invasion from without or dissension from within. Happily there is nothing in the national horoscope at this time to suggest that which, however, is within the possibilities of every nation—the horrors of foreign war or the presence of pestilence.

Great mountain ranges form natural barriers which do not have the redeeming features of great rivers and are more impregnable. California has these mountain ranges which would be her strength if she was self-contained, but which are her weakness if she lacks the elements of self-support.

At this time we constitute a scattered and heterogeneous set of communities made up of villages, towns and cities largely innocent of identity in interest, thought or hopes, and lacking that homogeneity of sentiment and singleness of purpose necessary to give strength and greatness to a State with such resources as California.

The building up of a commonwealth is a slow and apparently tedious operation. A combination of interests is necessary to its success. Those interests are more or less selfish and there must be a binding together of these selfish interests for the end sought. The interest of the commonwealth is the interest of the individual, but the individual, allowing his personal interests to overshadow his interest in the general good, is, more than likely, unable to see this and must be *educated* to the fact. This fact itself must be made so plain that it will create what is called public sentiment. Such a public sentiment once rooted in the minds of the people has an irresistible force against which no individual or corporation can successfully cope for any length of time.

The creation of wealth by the intelligent and honest industry of a community and the legitimate business use of that wealth is evidence of a high civilization and a guaranty of the integrity of the community and of good government.

The humblest pursuit that produces something of value that did not before exist, deserves encouragement at the hands of the community and is entitled to exemption from encumbrance or taxation.

The success of one legitimate industrial enterprise suggests the inauguration of others and by this means industrial communities are built up.

Indifference to the best interests of the State and neglect of the small industries which develop that best interest is a sin against the State. To build up a great structure like a State requires a foundation well laid and constructed of solid blocks well fitted and bound together by a cement that

becomes more perfect with time. The blocks that form the foundation are the industries that give employment to our men and women and the cement which binds these blocks together is public sentiment that becomes more concrete and solid with age.

With the development of industrial pursuits in the cities and the country and the extension of manual labor intelligently directed, there will be a higher moral standard; sobriety in habits and in thought will increase and, as the individual, by his personal efforts, is enabled to pay his way and set aside a little for the proverbial rainy day, he will become more content and happier, radiating cheerfulness to his surroundings as the sun's rays lighten up space.

Many of our ways in California may be bettered. Lotteries, unfortunately inaugurated here many years ago by the Mercantile Library, should be driven out and the efforts of some of the daily journals in this direction should receive our strong support.

Exact change should be made and there is no justification in exacting the humble cent, without value received, from the mechanic's wife when she makes her purchases at the market stalls and small stores.

Until we adopt the principles of making exact change we will lack one of the elements of industrial success.

The disproportionate number of liquor saloons should be lessened and numerous other amendments to our habits in small affairs, which I cannot now refer to, should be adopted.

The first and telling blow in the right direction has been struck by the Guest of to-night, the Manufacturers' and Producers' Association of California. Eternal vigilance is the price of liberty. The progress already made in creating a public sentiment true to the best interests of the State has been largely augmented by the constant vigilance and restless energy of this young Association, which numbers among its members and has in its directory the best and most progressive citizens of our State.

To our Guest, the Mechanics' Institute offers the toast of this occasion—
The Manufacturers' and Producers' Association of California.

TABLE.

TABLE OF THE INDUSTRIAL RANK IN 1880 AND 1890 OF TEN LEADING CITIES IN THE UNITED STATES COMPARED.

Referred to by President Hallidie in His Opening Address.

CITIES.	A	B	C	D	E	F	G	H	Averages of Columns BCDEFG
	Population. 1880—1890	Manufactur- ing Establish- ments. 1880—1890	Capital Invested. 1880—1890	Number of Employees. 1880—1890	Wages Paid. 1880—1890	Value of Material. 1880—1890	Value of Product. 1880—1890	Industrial Value. 1880—1890	
New York.....	1 1	1 1	2 1	1 1	1 1	1 2	1 1	1 1	1 1
Philadelphia.....	2 3	2 2	1 2	2 2	2 2	2 3	2 3	2 2	2 2
Brooklyn.....	3 4	3 3	4 4	7 4	5 4	4 4	4 4	5 4	4 4
Baltimore.....	7 7	4 8	9 8	5 8	9 8	10 9	8 8	9 8	8 8
Boston.....	5 6	5 5	8 13	4 7	4 5	5 6	5 6	4 7	5 7
Chicago.....	4 2	6 4	3 3	3 3	3 3	3 1	3 2	3 3	3 3
Cincinnati.....	8 9	7 6	7 7	6 6	6 7	7 7	7 7	6 5	6 6
San Francisco.....	9 8	8 9	10 10	11 11	10 10	9 8	9 9	10 9	9 9
St. Louis.....	6 5	9 7	6 5	5 5	7 6	6 5	6 5	7 6	7 5
Newark, N. J.....	15 17	10 10		10 10					
Buffalo.....	13 11	10 10	10 10						
Pittsburg.....	12 13	13 12	5 6	9 9	8 9	12 10	10 10	8 9	9 9
Jersey.....	17 19					8			
Cleveland.....	11 10								
New Orleans.....	10 12								

NOTE.—The “Industrial Value” is ascertained by deducting the value of the material from the value of the product.

REF Mechanics' Institut
606 (San Francisco,
M48r Calif.)
28th Report of the
1895 Industrial Exhibiti

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